



The Intonation of Topic and Focus: Zaar (Nigeria), Tripoli Arabic (Lybia), Juba Arabic (South Sudan) and Tamasheq (Niger)

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**THE INTONATION OF TOPIC AND FOCUS:
ZAAR (NIGERIA),
TAMASHEQ (NIGER),
JUBA ARABIC (SOUTH SUDAN)
AND TRIPOLI ARABIC (LIBYA)**

Bernard Caron, Cécile Lux, Stefano Manfredi & Christophe Pereira¹

The CorpAfroAs project, by gathering a group of languages into a set of machine-searchable corpora annotated with the same standard glossing system, has given us the opportunity of carrying-out this typologically-oriented study of the intonation of Topic and Focus in Afroasiatic languages, in relation to their phonological and information structures. The interest of this particular corpus is manifold: as Afroasiatic languages have phonologized pitch into different prosodic systems that vary from a demarcative accent system, e.g. Berber; to a lexical stress system, e.g. Tripoli Arabic; a pitch accent system, e.g. Juba Arabic; and a tone system, e.g. Hausa and Zaar, the question arises as whether these different prosodic systems correlate with different intonation systems.² More particularly, how does declination, which seems to be a universal of the intonation of declarative sentences, interact with other sentence types, such as Yes/No-Questions, WH-Questions, Exclamations, etc.? Likewise, when we switch to the study of information structure, is there a correlation between the prosodic systems and the intonational exponents of Topic and Focus? Between morphological and intonational exponents of Topic and Focus? In order to address these various questions, the paper will first set up the concepts and typological frame used for the study. Then, we will present a case study of four languages (Zaar, Tamasheq, Juba Arabic and Tripoli Arabic), each of them exemplifying a different prosodic system. Finally, we will end up by comparing the four systems, and drawing conclusions from a typological point of view.

1 TOPIC AND FOCUS

In this preliminary study of the relationship between sentence type, information structure and intonation in a selection of AfroAsiatic languages, one feature has emerged as characteristic of oral corpora, viz. the statistical prominence of topics, more especially in the case of conversations. This has led us to study the correlates of topics, i.e. foci, as contrasted with utterances that have neither a topic nor a focus. To reflect this partition, we have developed a three-pronged terminology introducing a typological division into *thetic*, *topical* and *focal* utterances. *Topical* and *focal* utterances are based on a dichotomy between two elements: *topic* and *comment* on the one hand; *focus* and *preconstruct* on the other hand. *Thetic* utterances are not based on such a dichotomy, and correspond to one single unit, expressing logically simple judgements. A parallel can be established with (Lambrecht 1994)'s typology (e.g. § 5.2.1, pp. 221 ff.), with *Topical* = Predicate-focus structure; *Focal* = Argument-focus structure; *Thetic* = Sentence-focus structure.

As can be seen from this parallel, we have narrowed down the use of the term “focus” to Argument-focus in order to stress the difference in the structure and nature of the relationship

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² We understand the words “intonation structure” in compliance with Knud Lambrecht's definition: “That component of sentence grammar in which propositions as conceptual representations of states of affairs are paired with lexicogrammatical structures in accordance with the mental states of interlocutors who use and interpret these structures as units of information in given discourse contexts.” (Lambrecht 1994:5)

between the two constituents of topical and focal utterances. In our terminology, a focus only appears in a structure where it is related to a preconstruct. ‘Preconstructed’, as opposed to ‘presupposed’ refers to a pragmatic element that has a linguistic manifestation as a clause-level construction, whereas what is ‘presupposed’ tends to refer to cognitive notions such as ‘representation of the world’ and ‘knowledge’ (Lambrecht 1994:55).

1.1 THETIC

In thetic utterances, the assertion is presented as a whole, corresponding to a logically simple judgement. They correspond to event-reporting sentences, e.g. the English “Here is ME.” Or the French “Maman, y’a Pierre qui m’embête!”. (Cornish 2005) characterises these utterances as follows:

« [...] selon les philosophes Brentano et Marty, les propositions thétiques comportent un « jugement unique » – l’état de choses dénoté par la proposition est présenté d’un seul tenant, pour ainsi dire – plutôt qu’un jugement « double », où un objet, une proposition (logique) ou un état de choses est d’abord identifié, puis dans un deuxième temps, quelque chose en est prédiqué (cette dernière situation correspondrait à un énoncé « topique-commentaire » ou bien à focus contrastif, impliquant un jugement « catégorique »). (p. 76)

We use the term ‘thetic’ to refer negatively to utterances that don’t have a topic or a focus.

1.2 TOPIC

Topics appear in topical utterances. A minimal topical utterance is characterized by a division into two intonation units: < Topic / Comment >. We use the word “topic” for what (Lambrecht 1994) defines as the ‘Topic Expression’: “A constituent is a topic expression if the proposition expressed by the clause with which it is associated is pragmatically construed as being about the referent of this constituent” (p. 131)

A topic states the referent on which the comment, characterized by the notion of “aboutness”, states what is asserted: “Jean [Topic], il est drôlement costaud [Comment]”.

In this work, we will further restrict the use of the word ‘topic’ as a short-cut for Argument-topic, i.e. the “disjoint lexical support” of the utterance (Morel & Danon-Boileau 1998). The Argument Topic, or Topic proper, is to be differentiated from left-dislocated circumstantials which include Time and Place adverbials, conditions, etc. In the literature, these are often treated together with topics, but they merely set the circumstantial frame for the following predication. In this study, we will use the term “Frame” (as a short-hand for Frame-setting Topic) to set them apart from the Topic (as a short-hand for Argument Topic).

A topic need not be integrated syntactically into the predication, e.g. the following examples taken from (Furukawa 1996: 25) where the topic is italicized: “Oh, tu sais, moi, *la bicyclette*, je n’aime pas me fatiguer”; “Oh, euh, mais tu sais, *le metro*, avec la carte orange, tu vas n’importe où.” A more complex topical utterance will have either more than one topic and/or include a focus inside the comment, e.g. MOI in the following example “Non, *la cuisine*, c’est MOI qui la fais.” (Lambrecht 1994: 293).

1.3 FOCUS

A focal utterance is a complex syntactic construction where a predication is given as a preconstruct falling outside the scope of the assertion. Out of this predication, an element is selected and identified

as the relevant element that fills the gap created by the extraction out of the predication. As a result we have two predications that are syntactically linked: a qualitative identification of the focus expression; and a ‘classical’ predication which is preconstructed (Caron 2000; Robert 1993). The assertion of the utterance bears on the identification of the focus expression, e.g. “*C’est JEAN qui est venu.*” where “*qui est venu*” = “() *est venu*” is the preconstruct (“someone has come”), and “*C’est JEAN*” identifies “*Jean*” with the “someone” who has come.

As stated in (Lambrecht 1994:224), the word “argument” in “argument focus” is used as a cover term for any non-predicative term in the proposition, including place time and manner. Included in focal utterances are Wh-Questions, as opposed to Yes/No-Questions.

1.4 SUMMARY

As a summary, our typology distinguishes between:

1. Topical utterances, divided into a topic expression and a comment; the assertion bears on the predication inside the comment ; the topic is merely stated;
2. Focal utterances, divided into a focus and a preconstruct; the assertion bears on the identification of the focus expression; the predication is preconstructed;
3. Thetic utterances which don’t have a focus or a topic ; the assertion bears on the whole utterance.

For the sake of feasibility, we will limit the scope of this paper to the study of Foci, Topics (disjoint lexical supports) and Frames (left-dislocated circumstantials) as these share certain intonational properties with Topics.

2 THE INTONATION OF TOPIC AND FOCUS IN ZAAR

2.1 ZAAR PROSODIC SYSTEM

Zaar is a tone language with three phonemic tones: High (written with an acute accent: **á**), Mid (left unwritten: **a**) and Low (written with a grave accent: **à**). Two contour tones result from the combinations High-Mid and Low-Mid on a single syllable, i.e. *resp.* Falling (written with a circumflex accent: **â**) and Rising (written with a caron: **ǎ**).

2.1.1 NEUTRAL INTONATION PATTERN AND DECLINATION

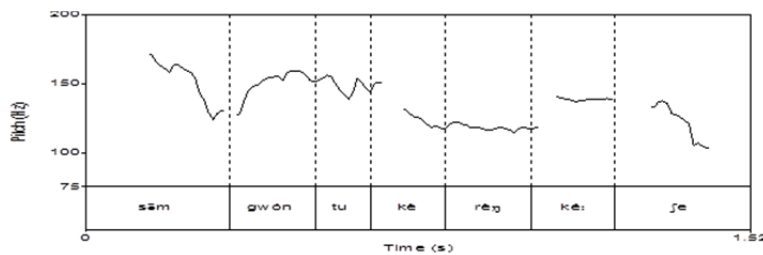
For both tone and non-tone languages, declination has been presented as a universal tendency due to physiological constraints,³ linked to the energy used to expel pulmonic air through the vocal organs. This creates the background for a “neutral” intonation against which variations of pitch by the speaker can be interpreted as meaningful patterns of deviations.⁴ In Zaar, it can be observed from the unit up to the period, as a gradual lowering of the pitch over the utterance. The “neutral” intonation pattern is characterized in Zaar by a combination of declination and a final fall.

This intonation pattern obtains for all types of sentences: assertions (see (ex. 1) for positive assertion, and (ex. 2) for negative assertion), Wh-Questions (see ex. 3), Yes/No-Questions (see ex. 4):

(1) *sâm gwón tu kèrènké:fe //*

sâm gón tu kèrènké:fe //
name.POS some OPN Kerenkeshe //

One was named Kerenkeshe. (SAY_BC_NARR_02_SP1_05)



(2) *á lǎ:r mí ǵa:wôs mánđi mà jèlí o: //*

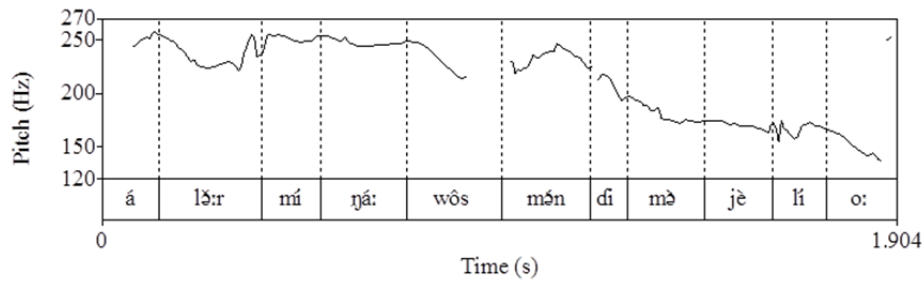
á lǎ:r =mí ǵa: =wôs mán -dí
3SG.AOR.SBJ bring =1PL.OBJ son =3SG.POS BEN -DIR

mà jel -i -o: //
1PL.AOR.SBJ see -SPCF FCT //

He has brought his son for us to see. (SAY_BC_CONV_02_SP2_029)

³ “ (...) F₀ tends to decline over the course of phrases and utterances, both in tone languages and in languages like English or Dutch.” (Ladd 1996: 73ff.)

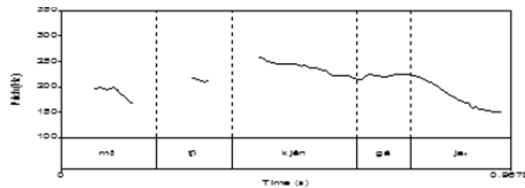
⁴ However, see (Bearth 1998) on Toura, a four-tone African language where declination is limited to local tonal downstep.



(3) *mà fĩ kɛ́ngája: //*

mà fĩ kɛ́ni =káj =a: //
 1PL.SBJV eat forward =ANAPH =NASS //

Shall we go on? (SAY_BC_CONV_02_SP2_091)

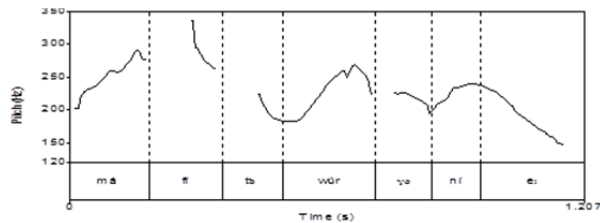


This neutral pattern remains unchanged by the specialized assertions markers which can appear at the end of the utterances: *-o:* for emphatic assertions (ex 2); *-a:* for non-assertions, e.g. Yes/No-Questions, which are always associated with this particle (ex 4); *-e:* for WH- Questions (ex 5).

(4) *má fĩ wúryɛ́nije: //*

má fĩ =tə wúri =kəni -e: //
 1PL.FUT do =3S.OBJ how? =COP2 -QUEST //

How shall we do? (SAY_BC_CONV_02_SP2_157)

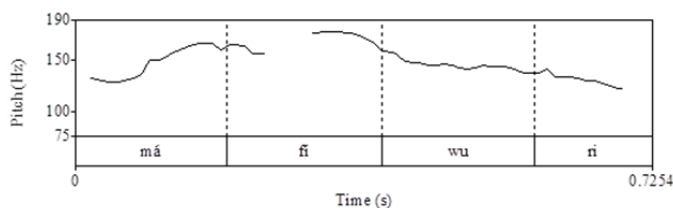


Simple Wh-Questions (without the final *-e:* particle seen above in ex 4) are merely characterised by declination, without a final fall, e.g. (Ex 5):

(5) *má fĩ wuri //*

má fĩ wuri //
 1PL.FUT do how //

How shall we do? (SAY_BC_NARR_01_SP1_683)



2.1.2 EXCEPTIONS TO DECLINATION

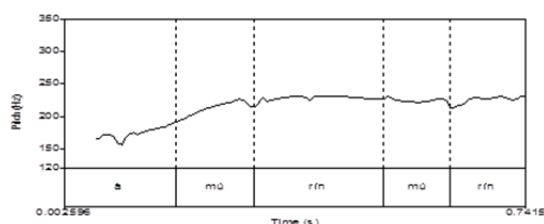
There are three types of exceptions to declination in Zaar, which are associated with: (i) suspensive intonation; (ii) utterance-final (ideophonic) adverbials; (iii) rhetorical questions expressing surprise or irony.

Suspensive intonation, characterized by the absence of final fall and a plateau at the end of the unit, can be observed, e.g. in exclamations:

(6) *à múrín múrín //*

á múr -én múr -én //
ah man -PROX man -PROX //

Ah, this man, this man! (SAY_BC_CONV_02_SP2_178)



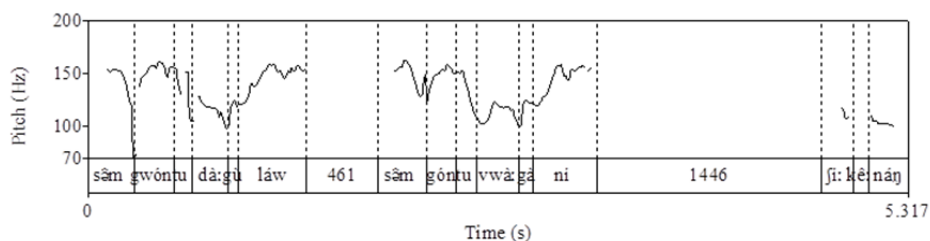
Suspensive intonation can be observed at the end of units in utterances consisting of lists, such as (ex. 7) with a list of proper nouns:

(7) *sâm gón tu dà:gùlâw / (461) sâm gón tu vwà:gàní / (1446) < jĩ: kê: nán > //*

sâm gón tu dà:gùlâw / sâm gón tu vwà:gàní /
name some COMP Dagulau / name some COMP Vwagani /

< jĩ:kê:nán > //
< shikenan > //

One was named Dagulau, one was named Vagani, that's it. (SAY_BC_NARR_02_SP1_07-11)

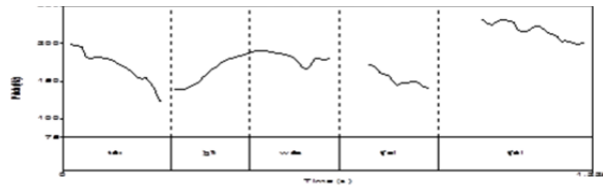


The intonation pattern characteristic of utterance-final adverbials finishes in a strong rise (High-rise), realised as an extra-High tone, pronounced outside the range of normal pitch variation. This is used for adverbials such as ideophones and adjectival ideophones, e.g. (ex 9), with extra-high pitch at 231Hz on the second syllable of *ʃolʃól*, ‘very smooth’, compared to an average of 168Hz for the rest of the utterance).

(8) *tò: ʒĩ:wôs ʃolʃól //*

tò: ʒĩ: =wos ʃolʃól //
well body =3SG.POS very_smooth //

Well, his body is very smooth. (SAY_BC_CONV_02_SP1_118)



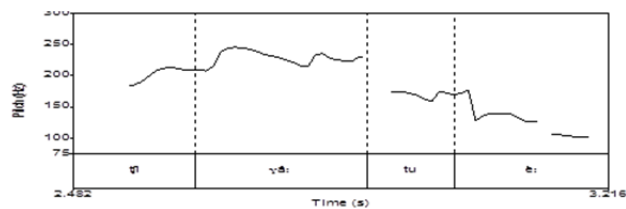
In rhetorical questions expressing surprise and/or irony, the utterance finishes in a Rise-Fall, i.e. an extra-High tone followed by a Fall, e.g. (ex. 9), in the rhetorical question *fîkâ:*, ‘Is that so?’, pronounced by a male speaker, culminating at 245Hz, compared to an average 146,5Hz over the next utterance *tu è:*, ‘He said yes.’ pronounced by the same speaker in the same example.

(9) *fîyâ: // tu è: //*

fîk =a: // *tu è:* //

thus =NASS // OPN yes //

Is that so? He said yes. (SAY_BC_NARR_01_SP1_046-7)



2.1.3 REGISTER

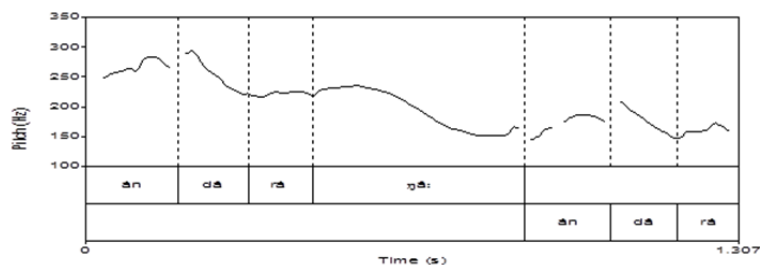
We have seen in the previous chapter that there is no influence of sentence types (assertions, questions) on the “normal” intonation pattern of Zaar consisting in a declination ending in a fall. Yet, we need to explore the possibility of a difference in register between for example, assertions and questions, with questions having a higher overall register than assertions.⁵ This might be the case if we compare the average pitch of the question (221Hz) to that of the answer (171,8Hz) in (ex. 10)

(10) *á ndârá ñâ: // á ndârá //*

á *ndará* *ñâ:* // *á* *ndará* //

3SG.AOR be_proper QUEST // 3SG.AOR be_proper //

Isn't it good? It's good (SAY_BC_CONV_02_SP2_032/SP1_037)



However, the comparison of the average pitch of a few declarative and interrogative sentences of the same female speaker in the second file of the corpus (*SAY_BC_Conv_02*) has brought a negative

⁵ See for example (Newman 2000:613) on the intonation of Y/N-questions in Hausa, characterised by suspension of declination and an overall higher pitch.

answer. The pitch of questions varies between 209 and 221Hz, whereas assertions vary between 172Hz and 312Hz, for an overall average of 226,76Hz. The three assertions above the average (240Hz, 306Hz, 312Hz) all relate to a passage where the female speaker gets carried away when criticizing the laziness of men, compared to the excessive work load of women. The high pitch of the question in (ex. 9) should not be attributed to the fact that it is a question, but to the ironic content of the rhetorical question. Overall differences in register in whole utterances are associated to emotional, inter-subjective relationships rather than sentence types.

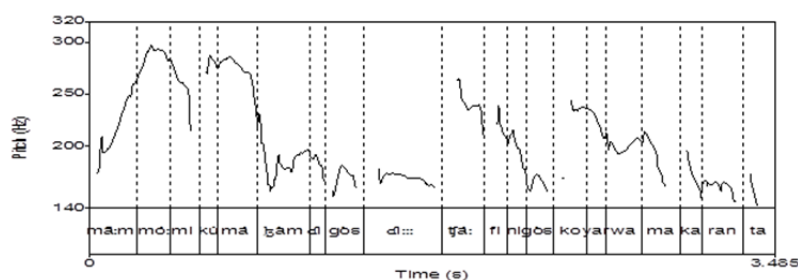
However, differences in register are used utterance-internally, as a demarcative exponent setting the limit between intonation units. See (ex. 11) consisting in 4 units: the first with a relatively high register and hardly any declination (259Hz, compared to the average pitch of the speaker: 226,76Hz); the second with a much lower register (176,5Hz); the third (206,7Hz) and fourth (194,5Hz) following a normal declination after a pitch reset.

(11) *mă:m mó:mi kúma / ɣàmɗi gòsɗi:: / fã: fini gòs / < koyarwa makaranta > //*

ma:m ké mó:mi kúma / ɣam -ɗi gòs -ɗi -:: /
mum POS Momi too / return -CTP 3SG.POS -CTP -LENGTH /

fã: fi -ni gòs / < koyarwa makaranta > //
3SG.IPFV do -INCH 3SG.POS / < teaching school > //

As for Momi's mother, the place where she goes, what she does is, teaching children in school. (SAY_BC_CONV_02_SP1_023-6)



Together with pause, length and pitch reset, change in register is one of the exponents of the intonation associated with topics.

2.2 FOCUS

Focus is expressed in Zaar through a cleft construction involving left-dislocation, and identification of the focus with either of the two ‘be’ copulas: the independent particle *nə* (Foc1), or the enclitic particle =*kən* or one of its allomorphs (=kandí, =kandá) (Foc2), or both (Foc3). The relativizer *ɗan* can optionally be associated with the Foc1 construction. This gives four different syntactic structures:

1. Foc1a : < *nə* NP > Predication
2. Foc1b : < *nə* NP *ɗan* > Predication (ex. 12)
3. Foc2 : < NP=*kən* > Predication (ex. 13)

The two structures can be combined:

4. Foc3 : < *nə* NP=*kən* > Predication (ex. 14)

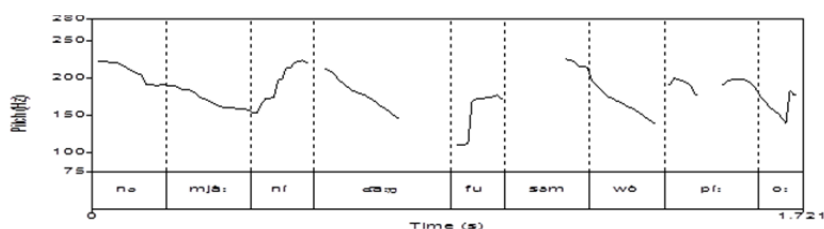
These structures have a negative counterpart when combined with the sentence-final negative particle *háŋ*, which can be completed by the optional loanword *bà:*, borrowed from Hausa, preceding the particle *nə*. The result is the structure (*bà:*) *nə* ... *háŋ*, as can be seen in (ex. 14).

The resulting focal utterances are realized as a single intonation unit, with the standard pattern characterised by declination and final Fall. There is no intensity stress on the focus, or pause between the left-dislocated focus and the predication.

(12) *nə mjà:ní dā:ŋ fu sām wòpí:jo: //*

nə mjà:ní dā:ŋ fu sām =wopm -í: -o: //
COP1 1PL REL2 3SG.PFV say name =1PL.POS -RES -ASS //

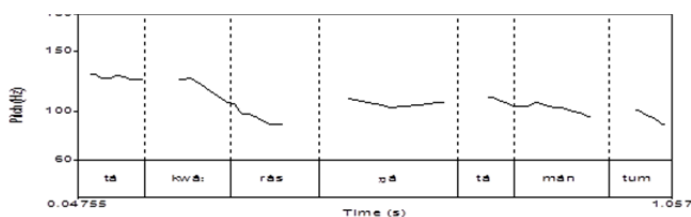
We are the ones whose name he called. (SAY_BC_CONV_02_SP2_221)



(13) *tákwâ:ràs átâ man tu =mə //*

tákwâ:ràs =kən átâ man tu =mə //
Takwaras =COP2 3SG.REM come meet =1SG.OBJ //

[...] it's Takwaras who came to meet me [...] (SAY_BC_CONV_03_SP1_695)

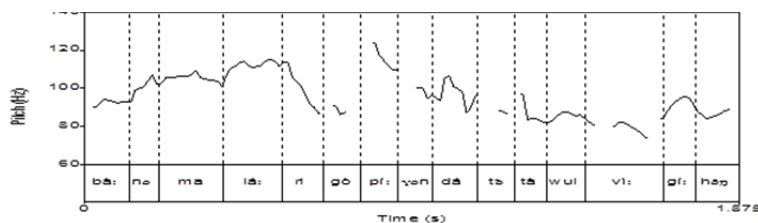


(14) *bà: nə malá:ri gòpí:yəndá tàtà wul vì: gí: háŋ //*

bà: nə malá:r -i gòpm -í: =kən
NEG1 COP1 Malar -INDF 1PL.POS -RES =COP2

tàtà wul vì: gí: háŋ //
1PL.REM say mouth DIST NEG2 //

[...] it's not our people of Malar who are speaking like this. (SAY_BC_CONV_03_SP1_698)



2.3 TOPIC

Two types of topics exist in Zaar: specified topics which are followed by a topic particle (called modal particle in Chadic linguistic tradition), and unspecified topics.

2.3.1 UNSPECIFIED TOPICS

Unspecified topics are left-dislocated, and correspond to an intonational unit characterized by various exponents separating the topic from the comment. The two main exponents that are always present are: suspension of declination, followed by a pause. These two exponents can be reinforced by a lengthening of the last segment of the topic, pitch reset and/or change of register. In (ex. 11), the second and third topics, *kàmdì gòsdì::* ‘the place where she goes’ and *fá: fíni gòs* ‘what she does’ are unspecified topics, separated by a change in register. The third topic is followed by a pitch reset. The first topic *má:m mó:mi kúma* ‘as for Momi’s mother’ is a topic specified by the discourse particle *kuma* ‘as for’.

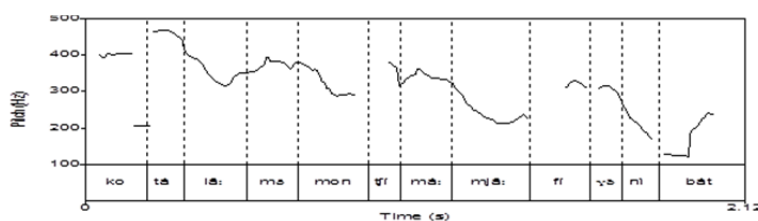
2.3.2 SPECIFIED TOPICS

When topics are followed by a modal particle, e.g. *kàm*, ‘indeed’; *má:*, ‘even’, *kúma*, ‘too, as for’, there appears none of the elements characterizing unspecified topics, and the utterance constitutes a single major unit with overall declination and final fall. This is the case in (ex. 15) where the topic *kotá lá: mámmonfĩ* ‘all the men’s work’ is specified by the discourse particle *má:* ‘even’:

(15) *kotá lá: mámmonfĩ má: mjă: fiyənì bát //*

kotá la: kə māmmonfĩ má: miká fĩ -kəni bát //
all work POS man \PL even IPL.CONT do -NMLZ all //

All the men's work even, we do it all. (SAY_BC_CONV_02_SP2_278)



As can be seen, the intonation of specified topics is not different from that of eitherthetic or focal utterances. This could mean that modal particles introduce some sort of focus in the sentences where they appear. However, it should be emphasised that specified topics are different from focus. The argument comes from a neighbouring language, Hausa, which has developed a split in the verbal system between TAM's which are \pm compatible with focus. Wh-Questions and Argument-focus require a TAM that is compatible with focus, whereas topics, whether specified or not, do not require such TAM's. This can be transposed to the function of topic particles in Zaar, which have all been borrowed from Hausa.

2.3.3 FRAMES

The intonation of frames (Circumstantial elements which belong to the left-dislocated part of the utterance) is the same as that of unspecified topics, i.e. they are accompanied by suspension of declination and followed by a pause. A good example of frame is provided in (ex. 16) by the condition *jâ:n nə ŋa: gət* ‘if it is a girl’:

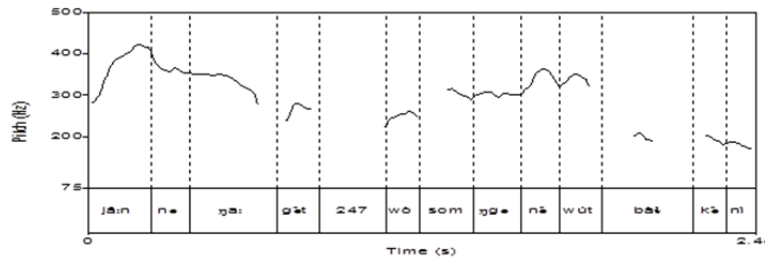
(16) *jâ:n nə ŋa: gət / (247) wò somŋə ná wút bàlkənì //*

jâ:n nə ŋa: gət /
if COP1 young woman /

wò som =kə ná wul =tə bał -kəni //

3SG.FUT help =2SG.OBJ for say =3S.OBJ tend -NMLZ //

If she is a girl, she will help you with minding the fire. (SAY_BC_CONV_02_SP2_290-2)



2.4 CONCLUSION

Zaar intonation can be characterized by the following elements:

1. There is no correlation between sentence types, i.e. affirmative or interrogative, and intonation patterns. Sentence types are marked by syntax and morphology, not by intonation.
2. Register does not play a role to identify sentence types, but is used as a demarcation device for intonation units.
3. Two generic intonation patterns emerge: the first one is associated withthetic and focal utterances, characterized by declination and final fall; the second one is associated with unspecified topics and frames. It is minimally characterized by suspension of declination and pause between the topic and the comment.
4. Minor intonation patterns have been identified. These are List-intonation and Exclamation, characterized by suspension of declination at the end of the unit; High-rise, associated with utterance-final ideophones and quality adverbials; Rise-Fall associated with rhetorical questions conveying surprise or irony.

3 THE INTONATION OF TOPIC AND FOCUS IN TAMASHEQ

Tamasheq is a Berber language (Afroasiatic phylum), spoken in the most desertic parts of 5 different countries: mainly in Mali, Niger Republic and Algeria, and, to a lesser extent, Libya and Burkina-Faso.

This paper, and more generally the Tamasheq part of the CorpAfroAs project, describes the Tawellemmet, a variety of Tamasheq spoken in the West of the Niger Republic: it is based on data collected near Abalak (West Niger).

Even if Tamasheq is a fairly well-described language, its prosodic elements are largely underdescribed, as are the information structures of focus and topic. Our aim, here, is to give an outline of the accentual and intonational systems in Tamasheq, and see the part played by intonation in focus and topic.

3.1 TAMASHEQ PROSODIC SYSTEM

3.1.1 ACCENT AND GENERAL INTONATIONAL CONTOUR

Tamasheq is one of the few Berber languages which has an accent, essentially demarcative, i.e. used to identify accentual unit boundaries. It regularly appears on the antepenultimate syllable of nouns or verbs (including clitic elements).⁶

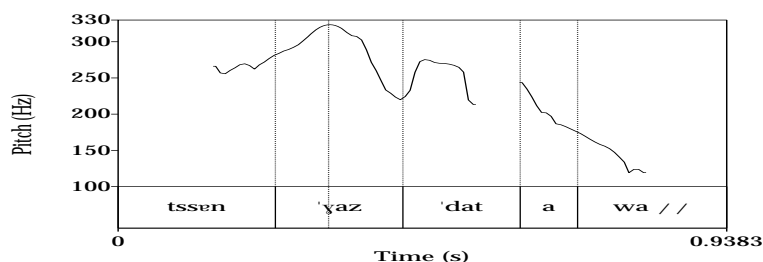
However, this demarcative accent can change position due to lexical or morphological constraints. For example, if a noun ends with a consonant, the last syllable becoming bi-moraic, the accent therefore falls on the penultimate syllable. As just mentioned, morphological considerations can also affect the rules of default accentuation: for example, resultative and imperfective verbal aspects have their own accentual patterns; possessive clitics, moreover, attract accent, and disturb the default demarcative rules. Finally, some nouns have their own accentual pattern, which is lexical.

As for the other languages of this study, the most frequent intonational pattern in Tamasheq is a falling one, characterized by a regular lowering of the pitch, typical of declarative statements, whether positive (ex. 17) or negative, and Wh-Questions (ex. 18):

(17) *tssen 'yas 'dat awa //*

t-	əssən	yas	dat	awa	//
2SG-	know\PFV	only	before	SG.M.PROXb.IDP	//

You knew that before. (TAQ_CL_NARR_03_003)



⁶ For further precisions, cf. (Heath 2005), (Louali & Philippson 2005), (Lux & Philippson 2010).

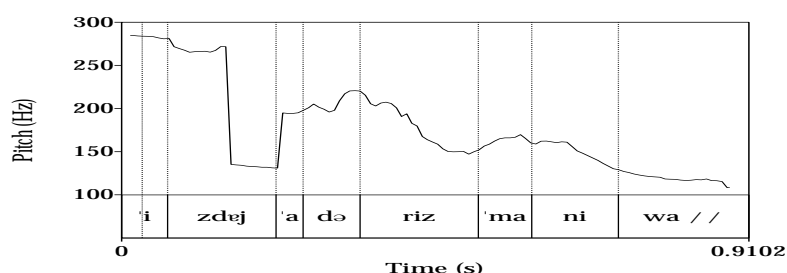
To be more precise, in an unmarked declarative utterance, F_0 normally rises up to the first demarcative accent, the pitch peak of the whole utterance, and then begins to fall regularly down to the end of the IU. In the example above, the pitch peak of the whole utterance is the vowel of the first accented word: the adverb *yas* ‘only’.

In (ex. 18), a Wh-Question, the pitch peak is the first vowel of the utterance, the subject marker *i-* of the verb *izdɛj* ‘he recognized’.

(18) 'izdɛj a 'dərɪz 'mani wa //

i-	əzdɛj	adərɪz	mani	wa	//
3SG.M-	recognize\PFV	track\ABS.SG.M	which.Q	SG.M.PROXB	//

Which track did he recognize? (TAQ_CL_NARR_03_085)



This general intonational pattern interacts with the perception of accent, as the power of accentuation follows the general intonational contour of the IU: the higher the F_0 in the intonational pattern, the more audible the accent is, and vice-versa.

For a neutral declarative sentence, i.e. with an intonation pattern characterized by declination over the IU, F_0 rises sharply with the first demarcative accent which constitutes the pitch-peak of the IU. The next demarcative accents follow the declination of the intonation pattern, and, if further rises in F_0 are possible, their absolute value is lower, and they get weaker and weaker, becoming almost inaudible at the end of the IU: there is a sort of accentual declination (see ex. 17 & 18).

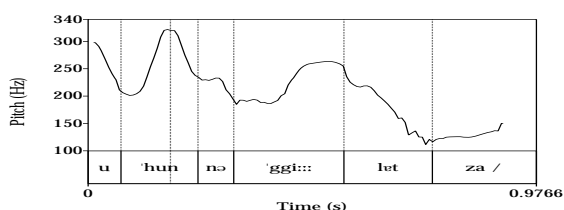
3.1.2 PARTICULAR ACCENTUAL CONTOURS

While in Tamasheq the neutral intonative pattern is falling (a universal trend in languages) we can often notice a rise of F_0 at the end of an intonation unit, which corresponds to a suspensive intonation. In that case, the general intonational pattern is falling, but F_0 rises at the real end of the IU, usually on the last syllable of the last term of the IU (or on the last two syllables), as we can observe on (ex. 19):

(19) u 'hun nə 'ggi::lət za /

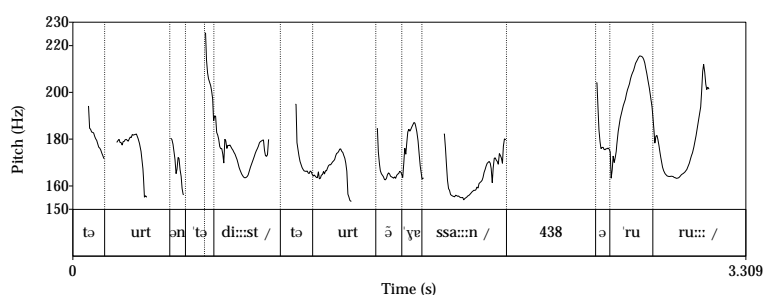
uhun	n-	əggilet	za	/
then	1PL-	move_on\RSLT	hence	/

So, we were moving... (TAQ_CL_NARR_005_15)



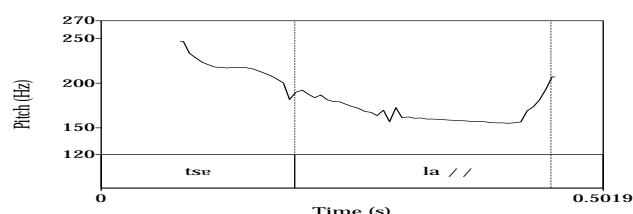
We find the same intonational shape for enumeration, in which the rise of F_0 at the end of the intonation units is accompanied by a lengthening of the last vowel of the IU, as we can see here in (ex. 20):

- (20) *təzzurt ən 'tədi::st / təzzurt ə 'yɛssa::n / 438 ə 'ruru:: /*
 t- əzzur -t n t- ədis -t /
 F- pain\ABS -F.SG GEN F- belly\ANN -F.SG /
 t- əzzur -t n yɛs -an / əru ru /
 F- pain\ABS -F.SG GEN bone\ANN -PL.M / back\ANN.SG.M /
 Pain of stomach, pain of bones, (of) back... (TAQ_CL_CONV_02_05)



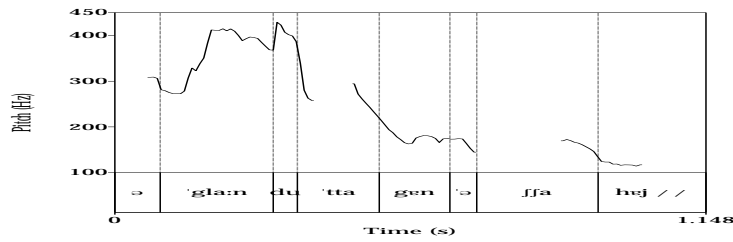
Another exception to declination is found in Yes/No-questions, where F_0 rises at the end of the unit, as we can see in (ex. 21):

- (21) *tsɛla //*
 t- əsla -ɐ //
 2SG- hear\PFV -2SG //
 Do you understand? (TAQ_CL_CONV_01_102)



Finally, among falling IUs, we can distinguish a sub-category which is typical of narratives: regularly, the entire group beginning an utterance is pronounced in a very high-pitched voice, and then F_0 begins to go down. In that case, we can no longer identify the pitch-peak of the IU, as a whole group has this role (ex. 22). What we have here is a device meant to make the text livelier: this is used by all our speakers. This somewhat modifies the neutral intonative pattern, even if the general curve, in this case, remains the falling one.

- (22) *ə 'gla:ndu 'ttagɛn 'əffahej //*
 əgla: -ɛn =du ad t- aggu -ɛn
 leave\RSLT -3PL.M =PROX POT IPFV- do\IPFV -3PL.M
 əffahej //
 tea\ABS.SG.M //
 Then, they left to make some tea. (TAQ_CL_NARR_03_073)



In (ex. 22) the general intonational contour is falling, but the first part of the utterance *əglan:du* ‘they left’ is pronounced at an extra-high level (F_0 average is 360Hz for this chunk -271Hz min. / 434Hz max.), and is separated from the rest of the IU, which is pronounced in a ‘normal’ voice, and much lower (F_0 average is 182Hz for this chunk -113Hz min. / 294Hz max).

Thus, Tamasheq has several intonational patterns, depending on sentence types, but the neutral intonational pattern is falling.

Specific constructions may also change this basic intonational pattern, i.e. focus constructions. These constructions are marked by their intonation, as well as their morphology and syntax. However, although Tamasheq uses different morpho-syntactic structures to differentiate between subject, object and predicate focus, these structures share the same intonation pattern.

3.2 FOCUS

3.2.1 SUBJECT AND OBJECT FOCUS IN TAMASHEQ

In Tamasheq, focus is expressed by morphological, syntactical and intonational means.

Syntactically, focus is left-dislocated. While neutral word order in Tamasheq is considered to be VSO, the normally post-verbal nuclear arguments move to clause initial position if focused (Heath 2005). Morphologically, three exponents are associated with focus. The first exponent is the morpheme *a*, originally a neutral demonstrative pronoun, which follows the focused term.

The second exponent affects the verb: when the subject is focused the verb appears in a dependent form, traditionally called ‘participle’, mainly used in subject relative clauses. This use of a dependency marker can be understood as an exponent of the preconstructed status of the predication.

The third exponent is the use of the ‘absolute state’. When the subject argument of a verb appears in its default place after the verb and if its morphological shape allows it, it carries a mark of dependency. If on the contrary, it is placed before the verb, this mark of dependency disappears, and the noun occurs in the ‘absolute state’. Thus, when the subject argument is focused, it is placed before the verb and occurs in the absolute, rather than annexed, state. The morphosyntactic exponents of argument focus in Tamasheq are summed up in the following table:

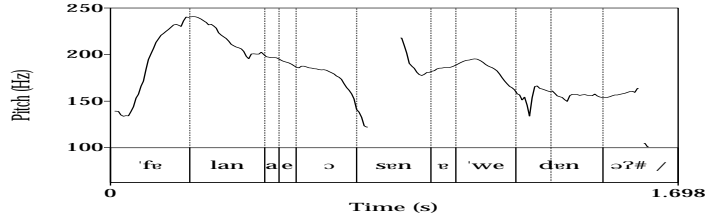
Non Focus	V	S ^[Annexed State]	O
Object Focus	O a	V	S ^[Annexed State]
Subject Focus	S ^[Absolute State] a	V ^[Participle]	O

Last but not least, in Tamasheq, focus has a specific intonational contour. Actually, we notice a pitch peak on the focused term, where a regular demarcative accent was expected, combined with a peak of the intensity curve, both on the accented syllable of the focused term, and on the morpheme *a*. (Ex. 23) illustrates these three features for the subject argument focus *fəlan*: morphological (underlined in the glosses), syntactical and intonational.

(23) 'felan a ɛmosɛn v'wedɛn əʔ# /

felan	<u>a</u>	<u>i-</u>	ɛmos	<u>-vɛn</u>
fellan	<u>FOC</u>	<u>SG.M.REL.SBJ-</u>	be\PFV	<u>-SG.M.REL.SBJ</u>
v'wedɛn	əʔ#	##		
person\ABS.SG.M	əʔ#	##		

It's Fellan who was someone... (TAQ_CL_NARR_02_02)



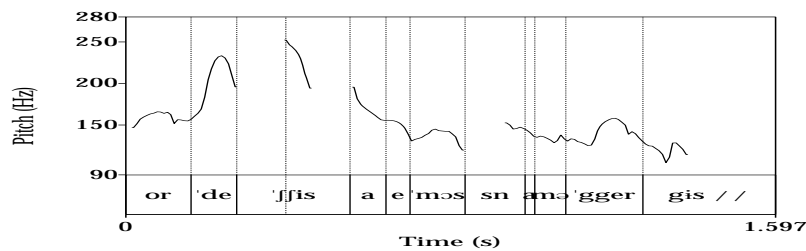
As far as intonation is concerned, we observe that the pitch-peak of the IU is the first syllable of the focus *felan* 'Fellan', combined with intensity peaks, on the same syllable of the word *felan* and on the morpheme *a*.

In this case, and quite often, as the focus is left-dislocated, it is the first element of the IU, so that the pitch-peak on the focus can be explained also by its position in the intonational contour. But this is not always the case: in spontaneous discourse, even though the focus is left-dislocated, we can find a preamble preceding the focus in the same IU, such as the introductory verb *orde* 'I think', in (ex. 24) where the subject is focused.

(24) or'de 'ʃʃis a e'mɔsn amə'ggergis //

orda:	-v	as	ʃi	=s	a
believe\RSLT	-1SG	that	father\SG.M	=3SG.M.POSS.KIN	FOC
i-	ɛmos	-vɛn	aməggergəs	//	
SG.M.REL.SBJ-	be\PFV	-SG.M.REL.SBJ	rich_man\ABS.SG.M	//	

I think that HIS FATHER was rich. (TAQ_CL_NARR_03_127)



In this case, *orde* 'I think' presents a pitch-peak (233Hz) as first term of the IU, but the highest pitch-peak is on the focus *ʃis* 'his father' (247Hz), even though it appears in second position in the IU. Besides, although the mean intensity of the utterance is 61dB, we can notice an intensity peak at 68,03dB on *ʃis* 'his father', and another peak at 68,81dB on the focus morpheme *a*.

Then, focus is not only marked by heavy morpho-syntactical means, but also by prosodic means (increase of F_0 and intensity), even when the focus is not at the beginning of the IU. Focus supersedes the declination characterizing the neutral affirmative intonational pattern.

Finally, when we compare the behaviour of focus and intonation across Berber languages, we find that if specific intonational contours are a common means of expressing focus, the conditions of variation of F_0 are specific to each language. According to (Mettouchi 2003), in Kabyle, the rise of F_0 in

contrastive focus constructions occurs on the focus morpheme *a*, and not on the focused term as in Tamasheq. This type of difference is to be expected, as each Berber language has its own prosodic system (as opposed to Tamasheq, Kabyle has no demarcative accent, for example) and confirms the necessity for prosodic systems to be described accurately for each Berber language.

3.2.2 PREDICATE FOCUS: DIFFERENT CONSTRUCTION, SAME INTONATION

Predicate focus in Tamasheq uses a construction that is similar, but more complex than argument focus. In that case, the semantic value of the action is carried out by a focused verbal noun followed by the conjugated verb *iga* ‘to do’, which has lost its semantic value. In these constructions, the morpheme *a*, a morphological mark of focus, is not obligatory. The main characteristics of predicate focus are summed-up in the following table, set against Non-Focus sentences:

Non Focus	V	S ^[Annexed State]	O
Predicate Focus	Verbal Noun ^[Absolute State] (a)	V iga	O

(Robert 1993: 45) presents an interesting analysis of this construction for various languages, when she argues that this kind of construction shows “une dissociation entre deux fonctions généralement confondues dans le verbe : celle de centre syntaxique (ici assumée par le pro-verbe) et celle de centre assertif (noyau rhématique exprimé par la forme nominale du verbe)”.

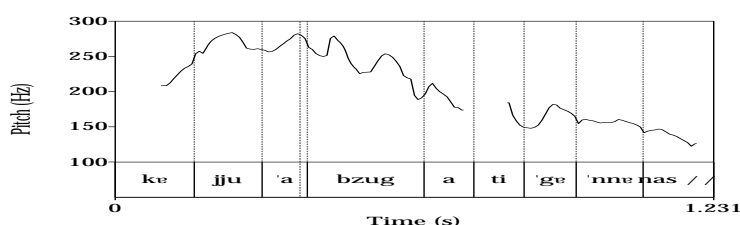
The pro-verb *iga* ‘do’ takes on the function of syntactical nucleus of the sentence while the assertive function is moved out of the verbal nexus and taken on by the morpheme *a* and the intonation stress highlighting the rhematic value of the Verbal Noun.

However unusual the predicate-focus structure may be for Tamasheq as compared to argument-focus structures, it still shares with them the same intonation pattern, e.g. in (ex. 25) with a rise of F_0 on the accented syllable of the focused item *abzug* ‘madman’, and two intensity peaks, one on the accented syllable of the focused item (77,80dB), and one on the morpheme *a* (79,20dB), for an average intensity of 70,47dB.

(25) *kejju 'abzug a ti'ge 'nnenas //*

kejju	abzug	a	t-	iga	-e
2SG.M.SBJ.IDP	madman\ABS.SG.M	FOC	2SG-	do\PFV	-2SG
ənna	-ən	=as	//		
say\PFV	-3PL.M	=3SG.DAT	//		

You, A MADMAN you are, they said to him. (TAQ_CL_NARR_03_109)



We can see that focus constructions are heavily marked in Tamasheq, by morphological and syntactical elements as well as by intonation. Yet, although three morpho-syntactical features enable us to distinguish between three focus constructions that are slightly different from one another, depending on the syntactic function of the focus (Predicate, Subject, Object), these three structures share the same intonation pattern.

Contrary to focus constructions, topic constructions in Tamasheq are lightly marked from a morpho-syntactic point of view. Moreover, as appears in the pilot corpus, they carry no specific intonational pattern.

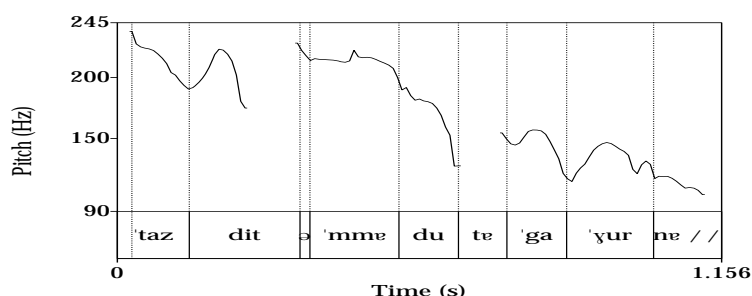
3.3 TOPIC

As already mentioned in the introduction, very few descriptions of Berber languages give an overview of topicalization. However, in the available literature, (Heath 2005), (Lafkioui 2010), (Kossmann 2011), the topic is minimally characterized by left-dislocation: “topicalized elements are put in the left periphery of the sentence” (Kossmann 2011: 132). In Heath’s opinion, topic is even “almost external to the clause” (Heath 2005). Apart from left-dislocation, two more elements are associated with the topic. As it is left-dislocated, the topic, like the focus, has a pre-verbal position. Thus, if it is a subject argument, it will appear in the ‘absolute state’ form, as opposed to non-topicalized post-verbal subjects that are in the ‘annexed state’. However, this morphological distinction between topicalized and non-topicalized subject is possible only if the topic is a subject, and if the morphological category of the noun allows that change. Then, according to Tamasheq grammars, the topic is very often taken-up by a pronominal element in the second part of the utterance. However, the use of such a resumptive pronoun is optional for topics, and it is very rare in the Tamasheq CorpAfroAs corpus of spontaneous discourse.

As for intonation, unlike other Berber languages, topic in Tamasheq cannot be associated with specific intonation patterns. For example, for (Lafkioui 2010), in Rifian Berber, topic is necessarily followed by an intonation cleft, and by an inversion of the melody. For Tamasheq, this seems to be less obvious, even if (Heath 2005) states that a topicalized element “may have a coma intonation” that probably corresponds to a break or a suspensive intonative contour. In the CorpAfroAs data for Tamasheq, most of the time, the topic is not correlated to a specific intonation, neither by a break nor by an inversion of the melody or a suspensive contour, as we can see in (ex. 26), where *tazdit* ‘the fact of recognizing’ is topicalized from an initial post-verbal position of object.

- (26) *'tazdit ə'mmɛdu tɛ'ga 'yurna //*
- | | | | | |
|----|-----------------|-------|--------|-------|
| t- | azdi | -t | əmmɛj | =du |
| F- | recognition\ABS | -SG.F | when.Q | =PROX |
-
- | | | | | | |
|------|--------|------|-----|-----------|----|
| t- | ɛga | -ɛ | yur | =ənɛɣ | // |
| 2SG- | do\PFV | -2SG | at | =1PL.PREP | // |

This vision, when did you have it in our place? (TAQ_CL_NARR_03_096)



In this example, *tazdit* ‘recognition’ is left-dislocated, and this is the only evident exponent of its topical status. From an intonational point of view, the accented syllable of the topic constitutes the pitch peak of the whole utterance, but this is the regular behaviour for the first term of a neutral IU. Topics are often the pitch peak of the utterances, but since they are also the first terms of IUs, this is the kind of intonation that is expected. As far as intensity is concerned, we can also notice that, for

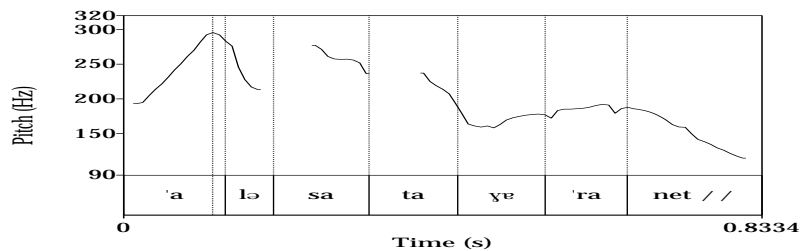
topics, there is no evidence of regularity: either the intensity curve is quite flat in those examples, or the intensity peaks are not underlying the topic, contrary to what is observed for focus.

However, an optional intonative mark can be associated with topic constructions: in some topicalized constructions, in our data, we have noticed a significant change of register between the topicalized term and the comment, e.g. (ex. 27).

(27) 'aləsa tayə 'ranet

aləs	=a	t-	ayəra	=net	//
man\ABS.SG.M	=PROXA	F-	characteristics\ABS.SG	=3SG.M.POSS	//

This man, these are his characteristics. (TAQ_CL_NARR_03_096)



In this topicalized nominal sentence ('This man, these are his characteristics.') the topic *aləsa* 'this man' is taken up by the resumptive possessive pronoun *=net*, 'his'. The pitch average is 252Hz for the topic, whereas it is only 174Hz for the comment.

We find the same register shift in (ex. 28), which is an example of a very frequent kind of topicalization where the topic is an independent subject pronoun.

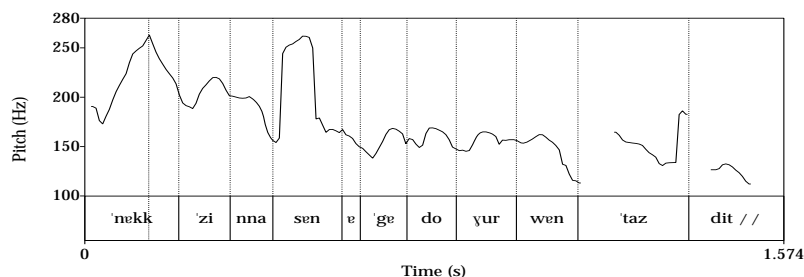
(28) 'nəkk 'zinnasən v 'gədo yurwən 'tazdit //

nəkk	za	i-	ənna	=asən
1SG.SBJ.IDP	hence	3SG.M-	say\PFV	=3PL.M.DAT

vga	-v	=du	yur	=əwən
do\PFV	-1SG	=PROX	at	=2PL.M.PREP

t-	azdi	-t	//
F-	recognition\ABS	-SG.F	//

As for me, he said to them, I had a vision there. (TAQ_CL_NARR_03_092)



In this example, apart from the register shift, we also notice the presence of the morpheme *za* ‘hence’ and the quotative *innasen* ‘he said to them’ between the topic and the comment⁷. Even if *za* ‘hence’ is not a morpheme of topicalization, it very often appears after the topic, especially with this kind of topicalization in which the topic is an independent subject pronoun. The insertion of these different elements supports the interpretation of the topic as external to the clause in Tamasheq, as Heath stated in his grammar (Heath 2005). In this precise case, the register shift occurs after the whole group topic - *za-innasen*.

To sum up, in Tamasheq the topic is marked by various emponents: left-dislocation; the so-called ‘absolute state’ if the topic is a subject; resumptive pronouns; discourse particles, e.g. *za*, etc.; and an optional intonational mark, i.e. a register shift. However, among those elements, the resumptive pronouns, discourse particles and register shift are all optional. The other elements (left-dislocation and ‘absolute state’) are shared with the focus. The only defining elements for the topic are negative, i.e. the absence of the morphosyntactic elements accompanying left-dislocation in the focus structure, which are the focus morpheme *a* and the heavy stress on the focused item.

These differences in the topic and focus structures are probably linked to the frequency of appearance of these two constructions. Actually, focus constructions are not frequent in Tamasheq, and they are heavily marked, while topic constructions are much more frequent, and, consequently, lightly marked. This illustrates the fact that the more frequent a construction, the less marked it is (and vice-versa); this is true both for morphosyntax and intonation.

3.4 TOPIC AND FOCUS IN THE SAME UTTERANCE

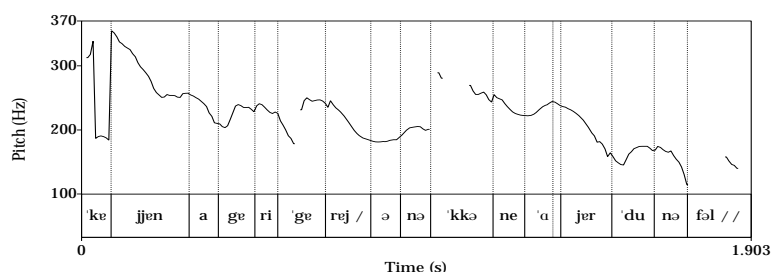
As a last example, I want to show how topic and focus can coexist in the same utterance.

First of all, the topic, as it is almost external to the clause, remains the first term of the IUs, whereas the focus, much more integrated into the clause, follows the topic. We can see in (ex. 29), in which two names of places (*agərɛjgərɛj* ‘Agaraygaray’ and *ajər* ‘Ayr Mountains’) are contrasted through two topicalized independent subject pronouns (*kəjju* ‘you’ and *nəkkəni* ‘us’).

(29) 'kəjjan agəri'gərɛj / ənə'kkəne 'ajər 'du nəfəl //

kəjju	ijan	agərɛjgərɛj	/		
2SG.M.SBJ.IDP	one\SG.M	Agaraygaray	/		
nəkkəni	ajər	=du	n-	əfəl	//
1PL.M.SBJ.IDP	Ayr	=PROX	1PL-	leave\AOR	//

You, you are an Agaraygaray (from the middle), and we, we come from AYR.
(TAQ_CL_NARR_03_115)



⁷ The pitch peak of F0 on the second syllable of the dative clitic *asen* is due to someone else speaking at the same time.

In this example the accented syllables of the two topicalized independent subject pronouns at the beginning of each intonation unit constitute the pitch-peak of the occurrences, which is the regular intonation for the first term of a neutral declarative occurrence.

In the second intonation unit, we notice a remarkable rise of pitch on the accented first syllable of *ajər* ‘Ayr Mountain’, which would be expected to be lower in a neutral declarative utterance. This rise in pitch is combined to a steeply rising intensity curve:⁸ We recognize here the typical intonative contour of focus. Moreover, *ajər* is left-dislocated: the object would be placed after the verb in a neutral word order. We remark also the migration of the directional particle *du* before the verb, something that is found in regular focus constructions.

Even if the focus morpheme *a* is absent in this example, we can consider *ajər* ‘Ayr mountain’ to be focused. Intonation on the one hand and left-dislocation on the other hand are enough to express focus: syntax (left-dislocation) and intonation seem to be the two most important elements in order to identify a focus in Tamasheq, as the only two elements that are obligatory.

3.5 CONCLUSION

As far as intonational patterns are concerned, we saw that Wh-Questions and assertive sentences are not differentiated by intonation in Tamasheq: they share the same falling intonational pattern, which has been defined as the neutral one. Only suspensive intonation, including enumeration and Yes/No-Questions presents a different intonative pattern, with a rise of F_0 at the end of the unit.

Focus constructions have a particular intonational contour too, which is obligatory and plays an important part in their identification: these morpho-syntactical heavily marked constructions are also heavily marked from an intonational point of view. On the contrary, topics, the other extraction process parallel to focus, have no specific intonation, apart from an optional register shift that can also be used in other constructions, and are only marked negatively by morpho-syntactical means. In Tamasheq, intonation, together with morpho-syntax, seems to underline the less frequent and more intricate constructions: topic is clearly periphrastic in the clauses, and can be easily identified; focus, on the other hand, is more intricate in the clause, and has to be underlined quite heavily, by different means, so as to be perceived.

⁸ While mean intensity for this IU is 70dB, the peak on this word reaches 79,8dB.

4 THE INTONATION OF TOPIC AND FOCUS IN JUBA ARABIC

4.1 JUBA ARABIC PROSODIC SYSTEM

Juba Arabic is a pitch accent language in which, differently from modern Arabic dialects, vowel length is not phonologically distinctive, whereas the position of pitch accent discerns both lexical (ex. *sába* ‘seven’ vs. *sabá* ‘morning’) and grammatical (ex. *kátulu* ‘to kill’, *katúlu* ‘the action of killing’, *katulú* ‘to be killed’) meanings (Manfredi and Petrollino 2013; Manfredi and Tosco, Forth.).

4.1.1 DECLARATIVE SENTENCES

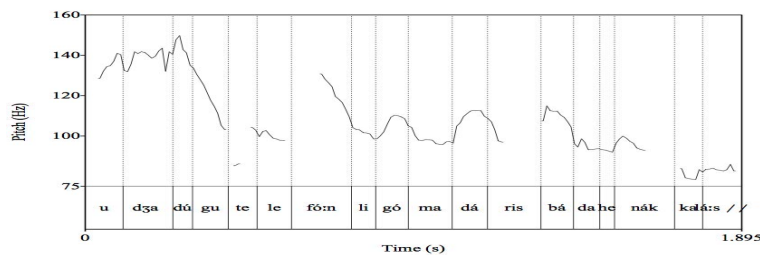
The unmarked status of declarative utterances in Juba Arabic is signaled by a global declining pattern of F_0 . More precisely, the gradual lowering of the intonation curve in declarative sentences regularly floats with the lexical high pitch accents included in a given intonation unit. In these conditions, the sentence accent corresponds to the highest pitch accent of the intonation curve. In (ex. 30), the sentence accent falls on the first syllable of the main verb *dúgu* ‘beat’ culminating at 149.3Hz while the bottom of F_0 corresponds to the first non-accented syllable of the last content word *kalás* ‘definitely’ which falls down to 78.4Hz. The following example forms a single intonation unit.

(30) *u dʒa dúgu telefó:n ligó madá:ris báda henák kalá:s //*

úo	dʒa	dúgu	telefón	ligó	madáris	báda	henák
3SG	do_after	beat	telephone	find	schools	start	there
kalás //							
definitely //							

He called (since) the school year already has started there.

(PGA_SM_NARR_1_113)



4.1.2 YES/NO-QUESTIONS

In most cases, Yes/No-Questions are morphologically and syntactically unmarked.⁹ On that account, prosody is fundamental to differentiate Yes/No-Questions from declarative utterances. Contrasting with the neutral intonation contour of declarative sentences, Yes/No-Questions are associated with an overall rising of the intonation curve in which the sentence accent falls on the first syllable of the last content word of the utterance. In (ex. 31), the sentence accent corresponds to the first syllable of the

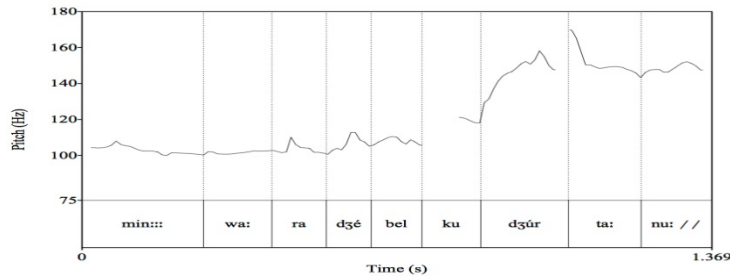
⁹ As observed by Manfredi and Tosco (Forth.), in Juba Arabic polar questions have the same SV(O) order as declarative utterances and they can be optionally introduced by the sentence initial interrogative particle *hal*, which is absent in our corpus.

phonological word [ta:nu:] (resulting from the agglutination of the 2SG independent pronoun *íta* with the following verb *ájnu* ‘see’) and it culminates at 169.7Hz.

(31) *min:: wára džébel kudžúr ta:nu: /*

min wára džébel kudžúr íta ájnu /
from behind mountain Kujur 2SG see /

From behind Mount Kujur, do you see? (PGA_SM_CONV_1_SP1_303)



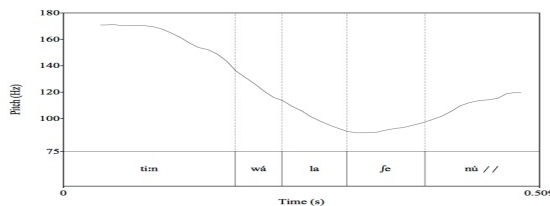
4.1.3 WH-QUESTIONS

As opposed to polar questions, Wh-Questions are marked by the same declining intonation pattern as declarative sentences. However, since all the question-words present a lexical high pitch accent on their last syllable (i.e. *munú* ‘who’, *fenú* ‘what’, *jatú* ‘which’) and they generally occur sentence finally, the bottom of the intonation curve corresponds to the penultimate syllable of the question word. In (ex. 32), the sentence accent corresponds to the monosyllabic subject *tin* [ti:n] ‘mud’ that reaches 171Hz, while the bottom of the intonation curve coincides with the first syllable of the interrogative pronoun *fenú* ‘what’ at 89Hz. The lexical pitch accent on the second syllable of the interrogative pronoun reaches 120Hz.

(32) *ti:n wála fenú //*

tin wála fenú //
mud or what //

Is this mud or what? (PGA_SM_CONV_1_SP1_431)



4.2 FOCUS

Morpho-syntax and intonation are complementary in marking contrastive focus in Juba Arabic which is characterized by the presence of at least two different contrastive focus markers. These are:

1. *zátu* (ge FOC1; rx PTCL.FOC) expressing contrastive focus proper.
2. *mà=* (ge FOC; rx INTF.FOC) expressing counter-assertive focus.

These focus particles normally act within a single intonation unit, and they correlate with different prosodic contours, as well as with different syntactic configurations.

4.2.1 THE CONTRASTIVE FOCUS PARTICLE ZÁTU

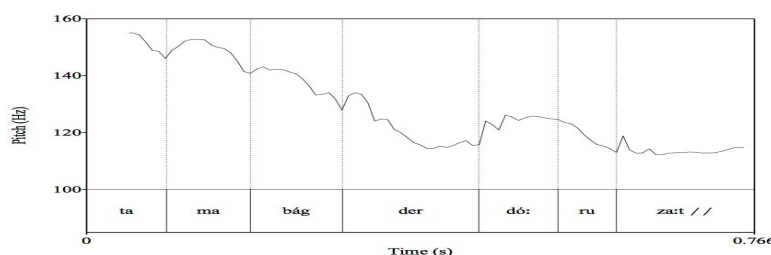
In Juba Arabic contrastive focus (i.e. the focus selected among presupposed alternatives) on arguments, predicates and sentences is marked by the independent focus particle *zátu* which is diachronically related to the Sudanese Arabic 3SG.M emphatic reflexive **za:t=u* ‘himself’. In Juba Arabic, *zátu* can be considered as a focus marker since its use is not obligatory in simple declarative clauses and it entails a contrast between the focused item and other entities that might fill the same syntactic position.

When *zátu* marks a contrastive focus on arguments and predicates, it follows the focused item. In these cases, *zátu* often occurs as the last content word of an intonation unit where it appears at the bottom of the intonation curve, while the focused item bears a higher pitch point induced by the following focus marker.¹⁰ In (ex. 33), the first syllable of the focused verb *dówru* ‘walk’ (realized as [do:ru]) culminates at 128.5Hz, and the focus particle *zátu* (realized as a monosyllable [za:t]) reaches 114.6Hz. In this context, it can be noticed that the sentence accent does not correspond to the focused item, since it falls on the non-focused subject *íta* (realized as a monosyllable [ta]) that reaches 154Hz.

(33) *íta ma bágder do:ru za:t //*

íta	ma	bágder	dówru	zátu	//
2SG	NEG	can	walk	FOC1	//

You cannot even walk. (PGA_SM_CONV_1_SP2_279)



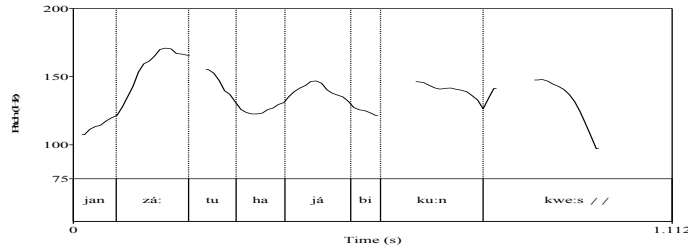
When *zátu* marks a sentence focus, it presents different prosodic and syntactic constraints. In this case, *zátu* precedes the whole focused sentence and it bears an extra-high pitch accent. In (ex. 34), the sentence accent falls on the first syllable of *zátu*, which is the first content word of the major intonation unit, and reaches 170.7Hz. The rest of the focused utterance *hajá bikún kwe:s* is characterized by a sharp fall of the intonation curve.

(34) *jan zátu hajá bikún kwe:s //*

jáni	zátu hajá bi=	kun kwes //
that_is_to_say	FOC life IRR=be	good //

Life can indeed be good. (PGA_SM_CONV_2_SP1_89)

¹⁰ It should be stressed that *zátu* can still be used as an emphatic reflexive pronoun (ex. PGA_SM_CONV_2_SP2_290 *úo zátu biwónusu ma ána sáwa* ‘he himself would talk together with me’). In these cases, *zátu* bears a pitch accent that is higher than that of the preceding noun phrase it is associated with.



4.2.2 THE COUNTER-ASSERTIVE FOCUS PARTICLE MA=

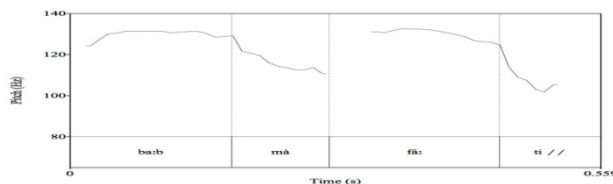
Counter-assertive focus is a sub-type of contrastive focus in which the speaker is at odds with the hearer, because the speaker considers that the embedded proposition should already be part of the mutual knowledge of the conversation, and presupposes that the hearer doesn't (Zimmerman 2007: 150).

As a consequence of morpho-syntactic interference with Sudanese Arabic, Juba Arabic speakers tend to integrate the proclitic *mà=* to mark a counter-assertive focus.¹¹ The prosodic contours of counter-assertive utterances are easily identifiable since the focused element is emphasized by a high pitch on its first syllable, while the preceding focus operator *mà=* is pronounced with a low pitch accent. In (ex. 35), the speaker points out the obviousness of the fact that the house door is habitually left open in Khartoum. He then puts in focus the adjective *fāti* 'open' whose first syllable reaches 132.5Hz. Prosodic prominence is also associated with a longer realization of the first syllable of the embedded element [fa:ti]. The counter-assertive marker *mà=*, is related to a lower pitch (113.2Hz) than both the preceding subject and the following focused attribute.

(35) *ba:b < màfa:ti > //*

ba:b	<	mà=	fāti	>	//
door	<	FOC=	open	>	//

The door is open (PGA_SM_CONV_2_SP2_602)



4.3 TOPIC

Juba Arabic marks topicalization by means of syntax and prosody. In addition, as in Zaar, we can distinguish between unspecified and specified argument topics.

In Juba Arabic unspecified topics do not present any marker of definiteness and they typically begin with the invariable existential copula *fī* that marks the introduction of a new referent into the universe of discourse (Manfredi and Tosco, Forth.). Unspecified topics are left-dislocated and they constitute a separate intonation unit ending with a suspension of declination and

¹¹ See (Manfredi 2009) for a description of the pragmatic functions played by *mà=* in the Baggara Arabic dialect of Western Sudan, and (Manfredi 2012 a, b) for details about interference between Sudanese and Juba Arabics.

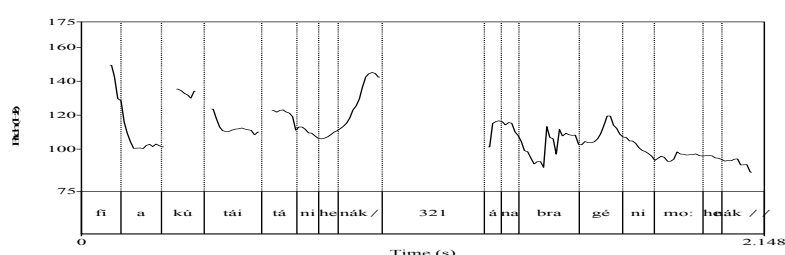
(optionally) a pause. As we can see in (ex. 36), the prosodic contour of the intonation unit containing an unspecified topic is characterized by an emphatic high pitch rise corresponding to the existential copula *fī* (reaching 149Hz) as well as by a sharp rise of the intonation curve on the last syllable of the last content word (in this case the adverb *henák* whose pitch reaches 145Hz in the topic, against 93.5Hz for the same adverb as final content word of the comment). The comment is characterized by a gradual declination of the intonation curve where the prosodic prominence falls on the first syllable of the main verb *géni* that reaches 119.5Hz. The syntactic role of the nominal topic is marked in the comment by a resumptive 3SG independent pronoun *úo* in oblique position.

(36) *fī akú tái táni henák / 315 ána bra géni mo henák //*

fī akú tái tani henák / 315
EXS brother POSS.1SG other there / 315

ána bi= rówa géni ma úo henák //
1SG IRR= go stay with 3SG there //

There's a friend of mine there, I will go (to stay) with him there. (PGA_SM_NARR_1_SP1_95-97)



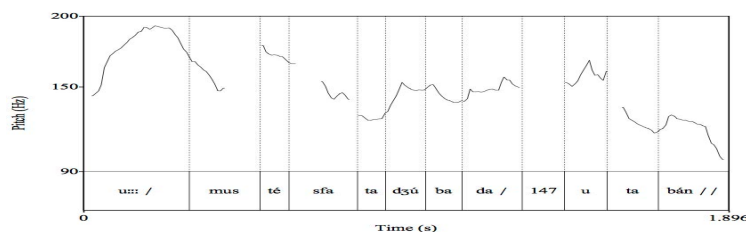
Specified topics are also left-dislocated but, unlike unspecified topics, they are also delimited by a final default proximal demonstrative pronoun *de*. In prosodic terms, specified topics typically constitute an intonation unit followed by a pause. (Ex. 37) shows a complex topicalized utterance where the first intonation unit corresponds to an intrinsically specified topicalized 3SG personal pronoun *úo* that is followed by a second intonation unit, constituted of the specified topic *mustéffa ta džúba de*. This second topic functions as an apposition to the initial independent pronoun *úo*. In this case, the syntactic function of the two topics is manifested in the comment by a resumptive 3SG independent pronoun *úo* in subject position.

(37) *u::: / mustéffa ta džúba da // 147 u tabán //*

úo / mustéffa ta džúba de // 147 úo tabán //

3SG / hospital POSS.Juba PROX.SG // 147 3SG tired //

It, the Juba hospital, it is poor. (PGA_SM_CONV_2_SP2_2-5)



4.4 FRAMES

In Juba Arabic, as in Zaar and Tripoli Arabic, the intonation of frames is the same as that of specified topics. This means that the left-dislocated frame is prosodically marked by suspension of declination

followed by a pause. In syntactic terms, frames are distinguished from topics by the absence of resumptive pronouns as they don't have any function as argument of the predicate.

(Ex. 38) shows a locative frame setting topic creating an intonation unit ending with a sharp rise of F_0 at 172Hz on the first syllable of the word *dʒúba* 'Juba'. The frame is followed by an argument topic and, then, by a comment. The argument topic is linked with a rising intonation culminating with the last content word *zol* 'man', while the comment is characterized by an emphatic high pitch on the first syllable of *múʃkila* 'problem' reaching 164Hz.

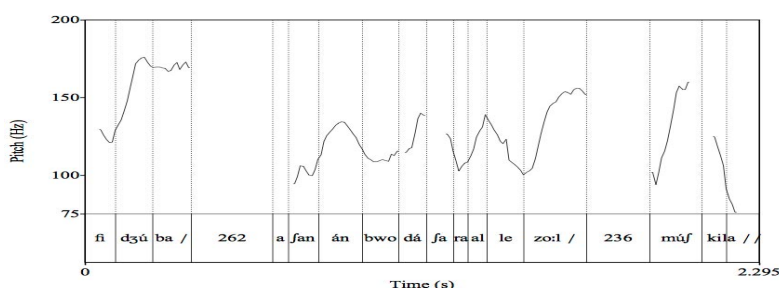
(38) *fɪ dʒúba / 262 aʃanán bwodáʃara álle zo:l / 236 múʃkila //*

fɪ dʒúba / 262 aʃán ána bi= wodíʃara alfle zol /
in Juba / 262 in_order_to 1SG IRR=give ten oh to man /

236 *múʃkila //*

236 *problem //*

In Juba, in order to give ten-thousands (pounds) to someone, it's a problem.
(PGA_SM_CONV_1_SP1_174-178)



4.5 CONCLUSION

All things considered, Juba Arabic intonation is characterized by the following elements:

1. There is an unmistakable correlation between sentence types and intonation patterns: declarative sentences and Wh-Questions follow a declining intonation pattern, while that of Yes/No-Questions is rising.
2. With regard to contrastive focus, we can observe the presence of different prosodic configurations related to different focus types: the first one is that of a contrastive focus marked by *zátu* on predicates and arguments in which there is no prosodic marking of contrastiveness; the second one is that of contrastive focus on sentences which is instead characterized by the presence of an extra high pitch on the focus particle *zátu* and a fall of F_0 corresponding to the rest of the focused sentence; the third one is related to counter assertive focus (a subtype of contrastive focus) where the focus marker *mà=* is systematically related to a low pitch while the focused element receives prosodic prominence.
3. Unspecified and specified topics are both syntactically and prosodically differentiated. In syntactic terms, unspecified topics are introduced by an existential copula *fɪ*, while specified topics are followed by the proximal singular demonstrative pronoun *de*. Prosodically speaking, both unspecified and specified topics are separated from the comment by a suspension of declination and a pause. Unspecified topics are also characterized by the presence of an extra high pitch on the existential copula *fɪ*.
4. Frame setting topics have the same intonation contour as specified argument topics. However, they are distinguished from argument topics by the absence anaphoric elements in the comment.

5 THE INTONATION OF TOPIC AND FOCUS IN TRIPOLI ARABIC

5.1 TRIPOLI ARABIC PROSODIC SYSTEM

Tripoli Arabic has a lexical stress system, i.e. every content word is stressed on one of its syllables. The place of the stress is not fixed but it is predictable (Pereira 2010: 88-89). The prosodic structure of Tripoli Arabic also involves sentence-level prominence stress: within a sentence, some words are more prominent than others and stress thus concerns one particular syllable which is perceived as the most prominent in the sentence.

5.1.1 NEUTRAL INTONATION PATTERN AND DECLINATION

In Tripoli Arabic, positive assertions (ex. 39), negative assertions (ex. 40), and Wh-Questions (ex.41) are characterized by declination (a gradual lowering of the pitch over the intonation unit). Yes/No-Questions (ex. 42) show a different intonation pattern characterized by a pitch rise occurring in the penultimate syllable of the intonation unit.

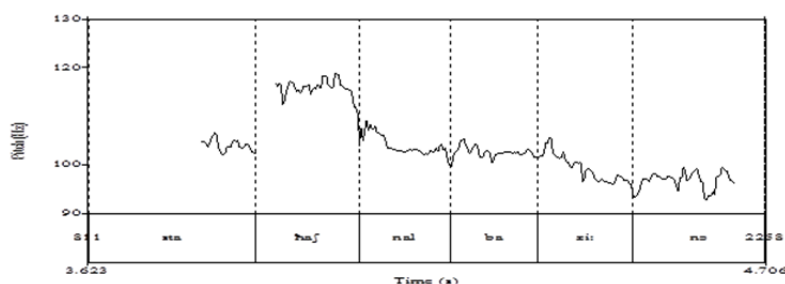
POSITIVE ASSERTION

(Ex. 39) illustrates the basic structure of intonation in a positive assertion. At the beginning of the utterance, on the first syllable, the pitch is 104.92Hz. The maximum pitch of the whole utterance is 119.15Hz indicating its nuclear stress: the maximum of the curve is situated on the second syllable [ħaʃ]. Then, the curve is characterized by the gradual lowering of the pitch down to 96.53Hz.

(39) *sta:ħaʃna əlbazi:n //*

sta:ħaʃ	-na	əl=	ba:zi:n	//
miss\PFV	-1PL	DEF=	barley_flour_gruel	//

We're short of barley flour gruel. (AYL_CP_NARR_01_003)



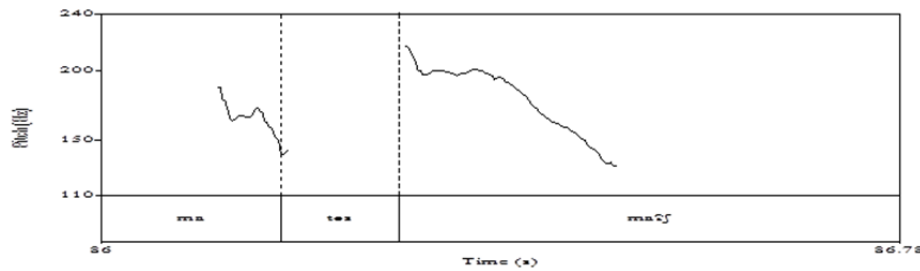
NEGATIVE ASSERTION

(Ex. 40) illustrates the basic structure of intonation in a negative assertion. At the beginning of the utterance, the pitch is 188Hz and it rises until 217.30Hz indicating its nuclear stress. Then, the last syllable of the utterance [maʃʃ] is characterized by the declination of the curve down to 131.75Hz.

(40) *ma tasməʃʃ/*

ma	t-	sməʃ	=ʃ	/
NEG	3F-	hear\IPFV	=NEG	/

She can't hear. (AYL_CP_NARR_06_073)



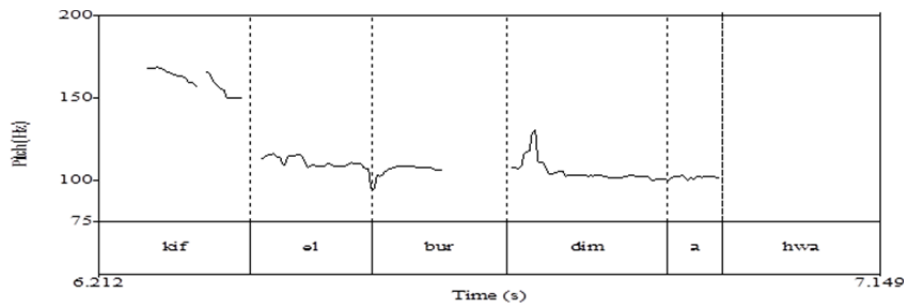
5.1.2 WH-QUESTIONS

The prosodic contour of Wh-Questions is characterized by the rapid fall-off from high pitch (from 168.67Hz down to 113.52Hz), occurring after the nuclear stress of the utterance situated on the vowel [i:] of the interrogative [ki:f] “how” (see ex. 41). The rest of the prosodic contour shows a gradual lowering of the pitch down to 93.83Hz for the last syllable.

(41) *kifəlburdim ahwa //*

ki:f əl= bu:rdi:m a:hu:wa //
 how DEF= steamed_meat PROX.M //

How is this steamed meat (cooked directly in a hole in the ground)?
 (AYL_CP_NARR_04_SP1_006)



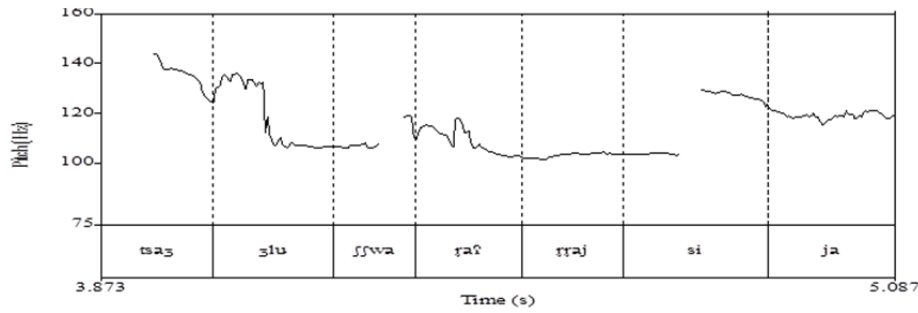
5.1.3 EXCEPTIONS TO DECLINATION: YES/NO-QUESTIONS

Yes/No-questions in Tripoli Arabic share the same SVO form of sentences as declaratives. The difference between them is signalled by intonation. Whereas the intonative contour of a declarative sentence (an assertion) is characterized by the gradual lowering of the pitch over the intonation unit, Yes/No-questions are characterized by the rising of the pitch occurring in the penultimate syllable, leading to the raising of the pitch register. The rise in the penultimate syllable of the utterance is related to the final lexical stress. Moreover, the vowel of the last segment is usually lengthened. In (ex. 42), the pitch decreases from 144.13Hz at the beginning of the utterance to 103.16Hz, and then suddenly rises to 129.43Hz when pronouncing the penultimate syllable [si].

(42) *tsaʒʒlu ffwaraʕ ʔrajsija //*

t- səʒʒəl -u əl= fwa:rəʕ əl= ʔa:jsi -a /
 2- record/IPFV -PL DEF= street/PL DEF= main -F /

Have you recorded the main streets? (AYL_CP_NARR_05_SP1_006)



5.2 TOPIC

In Tripoli Arabic, the topic is obligatorily marked by syntactic and prosodic means. From a prosodic point of view, topics in Tripoli Arabic correspond to an intonation unit. This unit is shaped like a bell: at the beginning, it is marked by the rising of the pitch, followed by an important lengthening of the last syllable, a moderate declination, and a lowering of the pitch at the end of the intonation unit that doesn't reach the lower end of the speaker's vocal range. This first unit is separated from the comment by a more or less perceptible pause and what follows (another topic or a comment) begins by a pitch reset which occurs at a boundary between intonation units.

5.2.1 SUBJECT AND OBJECT TOPICS

In (ex. 43), the subject *hadika ləmməwajja* ‘‘that water’’ is dislocated in sentence-initial position. The prefix *t-* of the third person feminine singular of the verb *tabda* ‘‘she/it begins’’ is co-referential with the detached constituent. In this example, there are two intonation units: the topic <*hadika ləmməwajja*> and its comment <*tabda tabda taqi# ə dgila*>. The topic is marked by the raising of the pitch contour up to 246.78Hz on the penultimate syllable [məj] and above all by the important lengthening of the vowel of its last syllable [ja:] (310 ms). Then, a pause separates each intonation unit: the topic is separated from the comment by an important 270 ms pause. After the pause, i.e. at the boundary between each intonation unit, a pitch reset occurs: from 170.25Hz up to 223.83Hz.

(43) *hadika ləmməwajja* / (270) *tabda tabda taqi# ə dgila* //

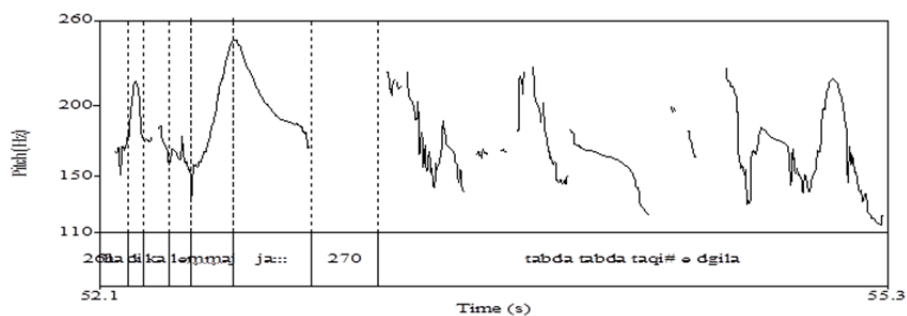
ha:di:ka əl= məmə:j -a / 270

DIST.F DEF= water\DIM -F / 270

t- bda t- bda taqi:# ə tgi:l -a /

3F begin\IPFV 3F begin\IPFV taqi:# ə heavy -F /

That water, it becomes, it becomes heavy, er, heavy... (AYL_CP_NARR_07_SP1_051)



In (ex. 44), the object *əlgasʕa::* “the tray” is dislocated to the sentence-initial position. In Tripoli Arabic, objects are expressed by clitic pronouns and, in this utterance, the pronoun of the third person feminine singular =*ha* “her, it” is directly bound to the verbal form *tsəmmi* ‘you name’ and is co-referential with the detached constituent.

This first topic is followed by a second one introduced by the adverb *ʕadatan* “actually” followed by the independent pronoun *hija::* “she, it” co-referent with the object *əlgasʕa::* “the tray”.

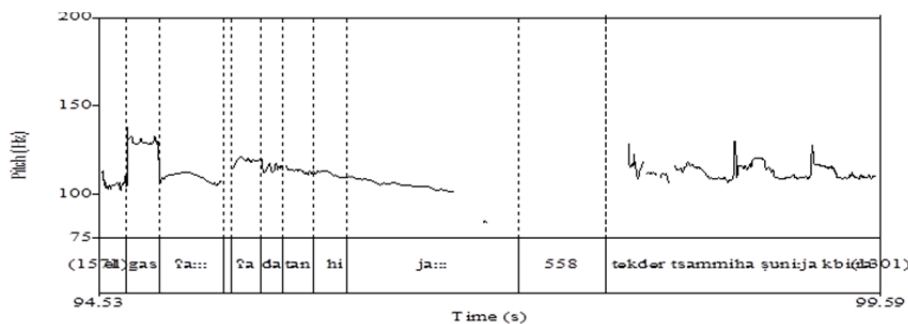
In this example, there are three intonation units: the first topic <*əlgasʕa::*> “the tray”, the resumption of the topic <*ʕadatan hija::*> “actually she/it”, and the comment <*təkdər tsəmmiha ʕuni:ja kbi:ra*> “you can call her/it big tray”. Each topic is characterized by a lengthening of the vowel of its last segment, followed by a pause. After each pause, a pitch reset occurs: from 107.92Hz to 119.99Hz, and from 101.32Hz to 128.71Hz.

(44) *əlgasʕa:: / ʕadatan hija:: / (558) təkdər tsəmmiha ʕuni:ja kbi:ra //*

əl= gəsʕ -a / ʕa:datan hi:ja / 558 t- gdər
DEF= tray -F / usually 3SG.F / 558 2- can\IPFV

t- səmmi =ha ʕu:ni:j -a kbi:r -a /
2- name\IPFV =OBL.3SG.F tray -F big -F /

The tray, as for it, you can call it big tray... (AYL_CP_NARR_02_SP1_063-066)



In Tripoli Arabic, topics can also be introduced by the prepositional phrase *b=nəsb-a l=* “concerning” and the particle *əmma* “as for”.¹²

(45) *bnəsb-a li ʕabi::ʕ / ahu sre fagga u xṭəb / əmma nafa::ʕ / mazal fweja //*

b=nəsb-a li ʕabi:ʕ / a:=hu
by=conformity-F to Rabia / PRST=OBL.3.SG.M

ʕra ʕəgg-a u xṭəb /
buy\PFV[3SG.M] apartment-F and ask_for_hand\ PFV[3SG.M] /

əmma na:faʕ / ma:za:l fwe:ja //
as_for Nafa / still a_little_bit //

Concerning Rabia, he bought an apartment and asked for a girl’s hand; as for Nafa, not yet.

This utterance is composed of two topics: the first one <*bnəsb-a li ʕabi::ʕ*> is introduced by a prepositional phrase and is followed by its comment <*ahu sre fagga u xṭəb*>; the second one, <*əmma nafa::ʕ*>, is a contrastive topic introduced by a particle. From a syntactic point of view, those are

¹² This example is quoted from unrecorded personal data not transcribed for the CorpAfroAs project.

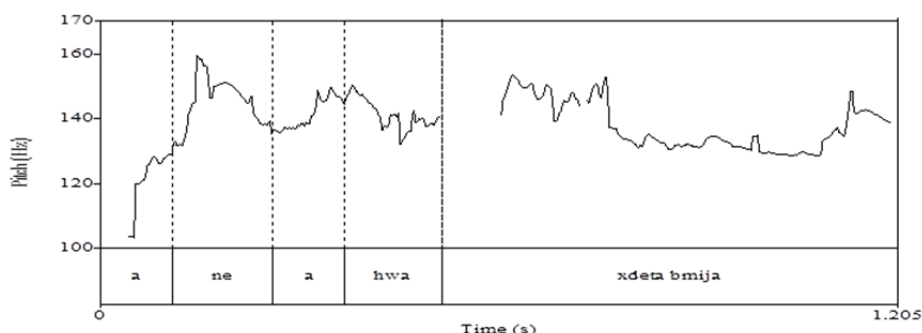
subject topics. The first topic is identified in the comment through the clitic pronoun of the third masculine singular =*hu*. The second topic is not syntactically integrated into the predication.

More complex topicalized utterances can have more than one topic. In (ex. 46),¹³ there are two topics: the first one <ane> “me” is the subject topic and the second one <ahwa> “this one” is the object topic; the comment is <xdetah bmija> “I took it for one hundred”. The semantic role of all topics is indicated in the comment: the suffix of the first person singular -*t* of the verb *xde:t* is coreferential with the topic *a:na* “me” and the bound clitic =*h* is coreferential with the demonstrative pronoun *a:hu:wa* “this one”. The speaker pronounced this utterance so quickly that the vowel lengthening and the pauses are barely perceptible. Nevertheless, each intonation unit begins with a pitch reset: from 144.91Hz to 146.80Hz and from 131.91Hz to 135.85Hz.

(46) *ane / ahwa / xdetah bmija /*

a:na / a:hu:wa / xde: -t =h
 1SG / PROX.M / take\PFV -1SG =OBL.3SG.M
 b= mi:j -a
 by= hundred -F

Me, this one (this mobile phone), I bought it for one hundred (Libyan Dinars)...



5.3 FRAMES

In Tripoli Arabic, the same prosodic contour as that of topics can be used to express other left-dislocated elements, called *préambule* in (Morel & Danon-Boileau 1998: 37-44). The same prosodic contour concerns adverbial phrases of place, adverbial phrases of time, and conditionals which are detached elements also placed at the beginning of the sentence.

(Ex. 47)¹⁴ shows a complex topicalized utterance with a topic, followed by an adverbial phrase of time, and followed by a comment. There are three intonation units: the topic <grubi ?ane::n> “my group of mine”, the adverbial phrase of time <zma::n> “at that time”, and the comment <fi nafs əlqism jəgru mʕaj> “they were studying with me in the same class”. Each left-dislocated element is characterized by lengthening of the vowel of its last segment. A pause separates each intonation unit. After each pause, i.e. at the boundary between each intonation unit, a pitch reset occurs (from 121.42Hz to 136.75Hz, and from 144.91 to 148.35Hz).

(47) *grubi ?ane::n / zma::n / (119) fi:: / nafs əlqism jəgru mʕaj //*

gru:p =i a:na / zma:n / 119

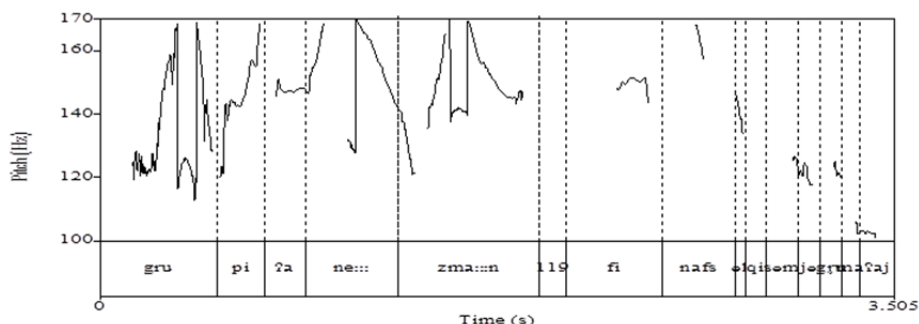
¹³ *ibid.*

¹⁴ *ibid.*

group =POSS.1.SG 1SG / period_of_time / 119

fī nafs əl= qism j- gra -u mʕa =j //
 in soul DEF= class 3- read\IPFV -PL with POSS.1.SG //

My group (of friends) of mine, formerly, they used to study with me in the same class.



5.4 FOCUS

5.4.1 FOCUS MARKER: THE PARTICLE ʔa:

In Tripoli Arabic, the particle *ʔa:* is used to focus the predicate or the entire predicative relation.¹⁵ This morpheme is used with a clitic pronoun that is co-referent with the subject of the utterance. The combination results in the following paradigm:

1SG.M	<i>ʔa:=ni</i>	1PL	<i>ʔa:=na</i>
2SG	<i>ʔa:=k</i>	2PL	<i>ʔa:=kum</i>
2SG.F	<i>ʔa:=ki</i>		
3SG.M	<i>ʔa:=h ~ ʔa:=hu</i>	3PL	<i>ʔa:=hum</i>
3SG.F	<i>ʔa:=hi</i>		

The third person masculine singular forms *ʔa:=h* and *ʔa:=hu* are grammaticalized and invariable. In Tripoli Arabic, they can replace the forms referring to any other person and thus precede any predicate.

The marker *ʔa:* is not combined with a specific intonative contour. The prosodic contour of the utterances is that of a declarative sentence, i.e. a descending one.

PREDICATE FOCUS

The particle *ʔa:* followed by a cataphoric pronominal clitic can be placed before a conjugated verb, as well as a noun or an adjective in a nominal sentence.

VERBAL PREDICATE FOCUS

ʔa: can precede a verb in the perfective:¹⁶

¹⁵ This morpheme comes from the Arabic verb *raʔa:* “he saw”. It also exists in other Arabic varieties and it has already been described as having an intensive value in Moroccan Arabic (Caubet 1992) and as a focus marker in Yemeni Arabic (Vanhove 1996).

¹⁶ Those examples are quoted from unrecorded personal data.

(48) *ṛak xallet əḍḍej maftuḥ //*

ṛa:=k xəlle:-t əl=de:j məftu:ḥ
FOC=2SG.M leave\PFV-2SG DEF-light open\PTCP.PASS.M

(Really / actually) You do have left the light on!

ṛa: can also precede a verb in the imperfective:

(49) *mḥəssəx ṣadnan / ṛah biḍayyṣək / ḥarṛ halba //*

mḥəssəx ṣadna:n ṛa:=h
be_dirty\PTCP.PASS.M Adnan FOC=3SG.M

b=i-ḍəyyəṣ=k ḥa:ṛṛ ha:lba
FUT=3-destroy\IPFV=OBL.2SG hot a_lot

Adnan is a dirty bastard, this is really going to destroy you, it's very spicy!

ṛa: can also precede a verbo-nominal form, i.e. an active participle:

(50) *ṛani ṣarəfkum //*

ṛa:=ni ṣa:ṛəf=kum
FOC=OBJ.1SG know\PTCP.ACT.SG.M=OBL.2.PL

I do know you / I do know who you are! (and I do know how bad you can be)

NOMINAL PREDICATE FOCUS

In a nominal sentence, *ṛa:* can precede a noun or an adjective and thus focus the nominal or the adjectival predicate.

(51) *ṛani mriḍ //*

ṛa:=ni mri:ḍ
FOC=OBJ.1SG ill

I am so / really ill !

(52) *libja ṛahi fi wuṛṭa //*

li:bja ṛa:=hi fi wuṛṭ-a
Libya FOC=OBL.3SG.F in impasse-F

Libya is in such a dead-end!

PREDICATIVE RELATION FOCUS

The invariable grammaticalized forms of the third person masculine singular *ṛa:=h* and *ṛa:=hu* can appear at the end of an utterance and thus focus the entire predicative relation.

(53) *dajra libja kullha gdimə fweja ṛah //*

da:jər-a li:bja kull=ha gdi:m-a
do\PTCP.ACT-F Libya every=OBL.3SG.F old-F

fwe:ja ṛa:=h
a_little_bit FOC=OBL.3SG.M

It has (already) been through all Libya; it's a little bit old indeed! ("the whole of Libya" knows it already !!!)

Even when *ṛa:* is situated at the end of the utterance, it is not combined with a specific intonative contour and the prosodic contour of the whole sentence is a descending one.

5.4.2 FOCUS EXPRESSED BY INTONATIVE CONTOURS

In Tripoli Arabic, focus can be expressed by intonative contours only. A correlation also exists between the intonative contours and phonetic (an important vowel lengthening) as well as syntactic marks (inversion of the word order and cleft sentences).

FOCUS EXPRESSED BY INTONATIVE CONTOURS ONLY

In Tripoli Arabic, contrastive focus can be expressed by intonative contours only: the element the speaker wants to focus is intonatively marked with a sharp rise in pitch. After the focused element, there is a sharp fall in pitch indicating the boundary between the focused element and the rest of the assertion.

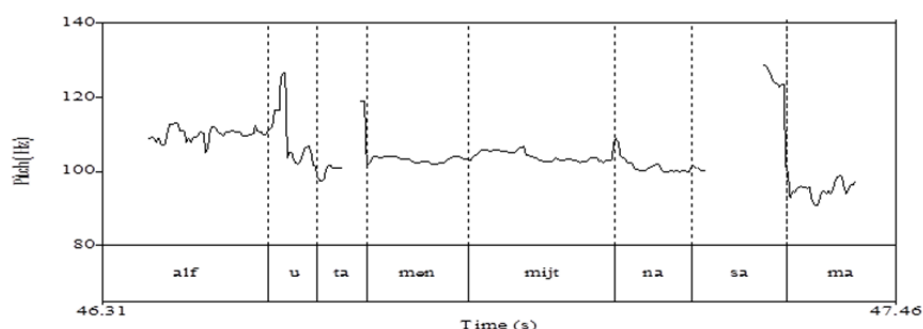
Let's consider the utterance in (ex. 54) that precedes the focus in the narration. The speaker was talking about the city of Tripoli and he was telling the number of its inhabitants. He first asserted that in Tripoli there were 1.800 inhabitants (instead of 1.800.000). In this utterance, the pitch varies between 90.26Hz and 128.56Hz.

(54) *alf u tən mi:j -t nasam -a //*

a:lf u tən mi:j -t nasam -a //

thousand and eight hundred -F\CS person -F //

One thousand and eight hundred persons. (AYL_CP_NARR_05_SP1_034)



When the speaker realized he was wrong, he immediately uttered the sentence in (ex. 55) to correct himself. He insisted on the word [məljən] “one million” (as opposed to “one thousand”), which is marked by a sharp rise in pitch from 113.58Hz at the beginning of the syllable [mə] to 147.36Hz indicating the maximum of the curve which is situated on the vowel [o] of the syllable [jən]. The word [məljən] is then followed by a sharp fall in pitch to 114.97Hz corresponding to the rest of the assertion beginning with the vowel [u].¹⁷

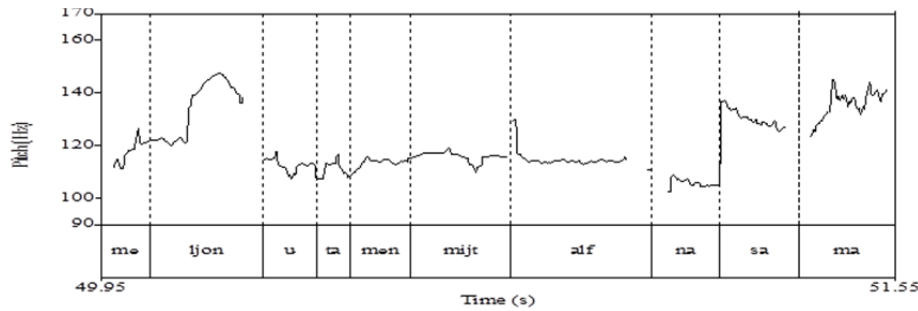
(55) *məljən u tən mi:j alf nasama //*

məljə:n u tən mi:j -t a:lf nasam -a //

million and eight hundred -F\CS thousand person -F //

It's ONE MILLION and eight hundred thousand people! (and not one thousand and eight hundred). (AYL_CP_NARR_05_SP1_036)

¹⁷ This confirms what has been described for three other varieties of Arabic (Moroccan, Yemeni and Kuwaiti) where “the shared strategy used to convey contrastive focus consists of a rising-falling movement” and “the accented syllables of focused words stand out clearly from the surroundings. This is brought about by considerably raising of F0 of the focused syllables and diminishing the F0 deflections on succeeding and preceding stressed syllables” (Yeou, Embarki & Al-Maqtari 2007, 322).



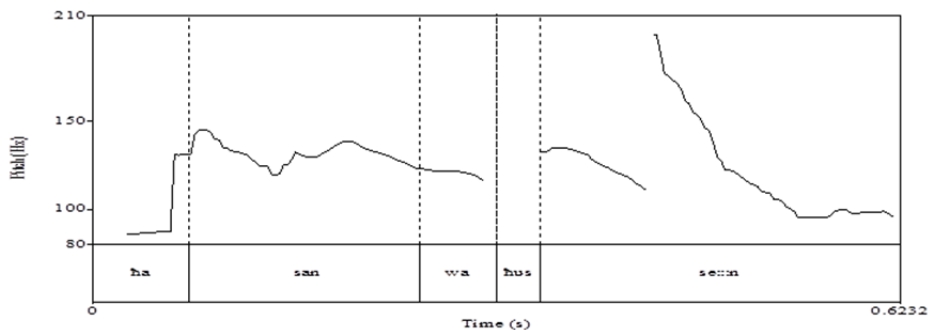
FOCUS EXPRESSED BY INTONATIVE CONTOURS + VOWEL LENGTHENING

The sharp rise in pitch can coincide with an important vowel lengthening. In (ex. 56), there are two focused elements: *hasan* “Hassan” and *huse::n* “Husseyyn” (the names of the speaker’s twin brothers). As for the first element, its first syllable [ha] is marked by a rise of F_0 from 85.66Hz to 131.06Hz, followed by a sharp rise on its second syllable up to 145.43Hz. This first focused element precedes a sharp fall of the pitch from 145.45Hz to 114.08Hz when the conjunction [u] “and” and the first syllable [hus] of the second focused element are uttered. Then, the intonative contour is marked by a sharp rise in pitch from 114.15Hz at the end of the syllable [hus] to 190Hz corresponding to the maximum of the curve situated on the vowel [e] of the last syllable [se::n]. Moreover, this syllable undergoes an important lengthening of its vowel (363 ms) and a fall of the intonative contour.

(56) *hasan u huse::n //*

hasan u Husse:n /
Hassan and Husseyyn /

It’s HASSAN and HUSSEYN! (For real, I swear it’s them both) (AYL_CP_CONV_07_SP2_086)



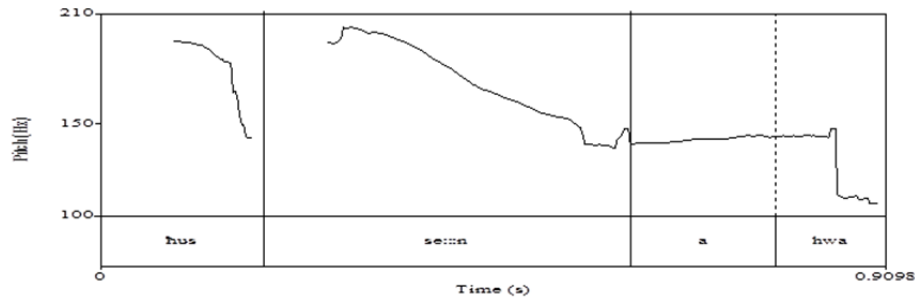
FOCUS EXPRESSED BY INTONATIVE CONTOURS AND WORD ORDER INVERSION

The sharp rise in pitch can also coincide with an inversion of the word order. In (ex. 57), the focused element *huse::n* “Husseyyn” is marked by a sharp rise in pitch from 142.24Hz at the end of its first syllable [hus] to 203.73Hz occurring on the second syllable [se::n], which is also marked by an important lengthening of its vowel [e::] (392 ms). Moreover, the word order is inverted and the focused element precedes the demonstrative pronoun *a:hu:wa* “this one” (*lit.* ‘HUSSEYN is this one’) as opposed to the canonical order *a:hu:wa huse:n* “This one is Husseyyn”. The nominal predicate ‘Husseyyn’ is focused by putting it before the demonstrative pronoun, thus inverting the order of the constituents, and insisting on the fact that this was Husseyyn and nobody else.

(57) *huse::n ahwa //*

huse:n a:hu:wa /
Husseyyn PROX.M /

This one is HUSSEYN ! (and not somebody else) (AYL_CP_CONV_07_SP2_089)

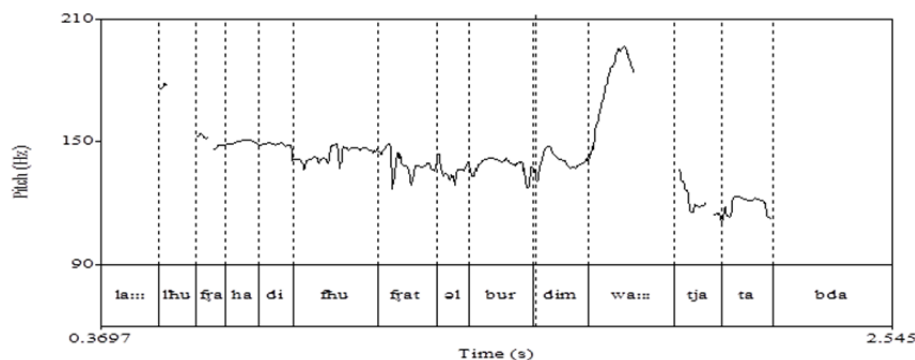


In (ex. 58) the focused element *wa::tja* “ready” is marked by a sharp rise in pitch from 137.40Hz to 196.08Hz, by an important lengthening of the vowel [a:] of its first syllable and by its anteposition before the verb *tabda* “she/it is”, as opposed to the canonical order *tabda wa:tja* “she/it is ready”. This serves here to direct one’s attention to the fact that the hole has been dug once and for all.

(58) *la:: lhufra hadi fhufɾat əlbɾdim wa::tja tabda //*

la əl= hufɾ -a ha:di f= #
 no DEF= hole -F PROX.F in= #
 hufɾ -t əl= bu:rɾi:m wa:ti -a t- bda /
 hole -F\CS DEF fire_hole ready -F 3F- begin\IPFV /

No! This hole... The hole to cook the steamed meat is already READY! (It has been dug once and for all) (AYL_CP_NARR_04_SP1_088)



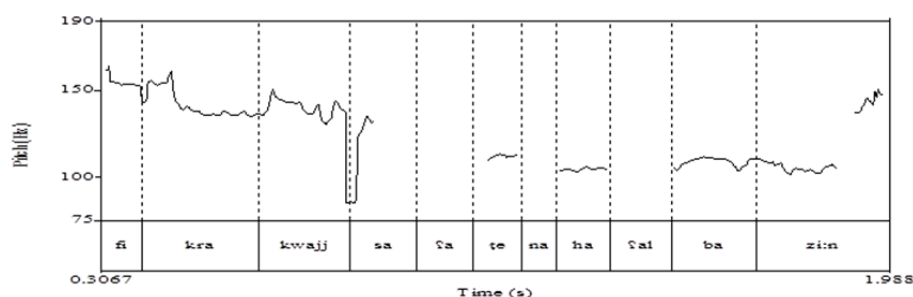
FOCUS EXPRESSED BY INTONATIVE CONTOURS AND CLEFTING

Combined with a sharp rise in pitch, cleft sentences can also focus an element. In (ex. 59) the utterance is composed of two intonative units: the first one <*fikra kwajjsa*> “a good idea” is the focus and the second one <*ʕaʕenaha ʕalbazi:n*> “we gave you about the *ba:zi:n* (barley flour gruel)” is the pseudo-relative clause. The register of the cleft sentence, i.e. the focus, is much higher than that of the pseudo-relative clause: whereas the average pitch of the first intonation unit is 140.33Hz, the average pitch of the second intonation unit is 107.50Hz. The first intonation unit begins with the nuclear stress of the assertion that peaks at 164.44Hz followed by a fall to 131.70Hz. Then, there is a sharp fall in pitch to 109.84Hz, indicating the border between the focus and the pseudo-relative clause that begins at 109.84Hz and finishes at 105.61Hz.

(59) *fikra kwajjsa / ʕaʕenaha ʕalbazi:n //*

fikr -a kwəyyəs -a /
 idea -F good -F /
 ʕɛ: -na =ha ʕ= əl= ba:zi:n //
 give\PFV -1PL =OBL.3SG.F on= DEF= barley_flour_gruel //

It's a good idea we've given you about the *ba:zi:n* (barley flour gruel).
(AYL_CP_NARR_03_SP1_265)



5.5 CONCLUSION

Tripoli Arabic intonation can be characterized by the following elements:

1. There is a correlation between sentence types and intonation: since yes/no-questions and assertions share the same SVO form, the difference between them is signalled by intonation.
2. Three intonation patterns emerge:
 - a. The first one is associated with declarative sentences and is characterized by declination; this intonation pattern is shared with predicate focus characterized by the morpheme *ra:*.
 - b. The second one is associated with topics and frames and is marked by an important lengthening of the vowel of the last segment of the intonation unit containing the left-dislocated element, followed by a pause and a pitch reset; this pattern concerns topics and frames.
 - c. The third one is associated with argument foci and is marked by a sharp rise in pitch while pronouncing the focused element (which coincides with the nuclear stress of the utterance) and followed by a sharp fall in pitch for the rest of the utterance. As expected, Wh-Questions share the same prosodic contours as argument-foci since the interrogative pronoun in a Wh-Question is syntactically focused. Moreover, in Tripoli Arabic, this third intonation pattern can be combined with phonetic or/and syntactic marks, viz. (i) an important vowel lengthening; (ii) inverted word order (the anteposition of the focused element); (iii) clefting. Anteposition can combine with an important vowel lengthening.

6 CLOSING REMARKS

Strong individual features have emerged from the survey of our four languages:

Zaar only has two basic intonation patterns: one for unspecified topics, and a default pattern, characteristic ofthetic sentences, which is shared by all other assertion and information structures.

Tamasheq has a very complex system of morpho-syntactic exponents of focus, depending on the syntactic function of the focused item. Each of these structures corresponds to a specific intonation pattern identifying the focus. Topic, on the other hand, has only two compulsory syntactic exponents: left-dislocation and the use of the absolute state for the topicalized item. Apart from those two, all other exponents, whether morphological (the particle **za**) or intonational (pause, register shift, vowel lengthening) are optional.

Juba Arabic uses the morphemes **zatu** in two different positions to differentiate between argument and predicate focus, and **ma** for counter-assertive focus. These three types of focus structures are associated with three different intonation patterns. As for topic, Juba Arabic differentiates between specified topics, marked with the morpheme **de**, and unspecified topics, marked with the existential copula **fi**. Again, these two types of topics each have their own intonation pattern.

Tripoli Arabic has the same opposition between predicate focus marked with **ra:**, and argument focus with no morphological marker. Each of these two structures is associated with its specific intonation pattern. Finally, Wh-Questions in Tripoli Arabic are clearly a case of focused utterance since their question-word is left-dislocated and they share the same intonation pattern as argument focus. This is different from the other three languages where the question words remain *in situ*.

Despite those differences, strong tendencies emerge from this first survey of the intonation of topic and focus in our four AfroAsiatic languages with different phonological pitch systems.

The first tendency concerns the default intonation ofthetic sentences. It is characterized by a bell-shaped curve with a peak on the nucleus of the utterance (whether the first high tone of the first content word for Zaar, or the sentence nuclear stress for the other languages), followed by a continuous declination down to a final fall.

The second one concerns the intonation of topic. It is characterized by (i) left-dislocation; (ii) a boundary consisting of either or all of the following elements: vowel lengthening, pause, change of register. These two elements define the topic as an initial intonation unit.

The other intonation patterns characterizing the structures of Yes/No-Questions, Focus and Wh-Questions exhibit a series of variations. These variations however follow a rule: lack of a specific intonation pattern for a specific information structure is supplemented by morpho-syntactic marking. A good example is given by Yes/No-Questions where the general pattern is that of a specific intonation with no morpho-syntactic marking. This intonation pattern is characterized by a sharp rise towards the end of the utterance. In Zaar however, the intonation pattern of Yes/No-Questions is the same default intonation pattern as that ofthetic sentences in all four languages, but this absence of specific intonation pattern is supplemented by a sentence-final **-a:** suffix characterizing this type of assertion. Likewise, in Tripoli Arabic, predicate focus is marked by the morpheme **ra:**, and the intonation pattern is that of defaultthetic sentences. Argument focus on the other hand has no equivalent to the **ra:** morpheme of predicate focus, but has a specific intonation pattern characterized by a sharp rise in pitch on the focused element, followed by a sharp fall for the rest of the utterance. This is summed up in the formula: the more a structure relies on morpho-syntax, the less it relies on

intonation. Tamasheq, however, is an exception to the extent that topic has very few exponents, whereas focus combines a specific intonation with heavy morphological and syntactic exponents.

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